

PART 1 – CAS/STN SEARCH HISTORY

FILE 'REGISTRY' ENTERED AT 08:33:33 ON 07 OCT 2003

L22 567 S CA/ELS,MAC AND P/ELS,MAC AND O/ELS,MAC AND F/ELS,MAC
 L23 55 S L22 AND CL/ELS,MAC
 L24 18 S L22 AND SB/ELS,MAC
 L25 42 S L22 AND MN/ELS,MAC
 L26 1 S ANTIMONY/CN
 L27 1 S MANGANESE/CN

FILE 'HCAPLUS' ENTERED AT 08:37:18 ON 07 OCT 2003

L28 576 S L22 AND ((L26 OR L27) OR SB OR MN OR MANGANESE OR ANTIMONY)
 L29 5156 S L22

FILE 'REGISTRY' ENTERED AT 08:39:02 ON 07 OCT 2003

L30 6 S L23 AND L24
 L31 14 S L23 AND L25
 L32 14 S L24 AND L25

FILE 'HCAPLUS' ENTERED AT 08:39:03 ON 07 OCT 2003

L33 219 S L23
 L34 14 S L24
 L35 152 S L25
 L36 10 S L30
 L37 11 S L31
 L38 12 S L32
 E ELECTRIC LAMP/CT
 E E4+ALL/CT
 L39 165075 S ("RADIATION SOURCES"/CT OR "LIGHT SOURCES"/CT OR "ELECTRIC LAMPS"/CT OR
 "LAMPS, ELECTRIC"/CT) OR "ELECTRIC DISCHARGE LAMPS"/CT OR ("FLASH LAMPS"/CT
 OR "ION SOURCES (L) PLASMATRONS"/CT OR PLASMATRONS/CT OR "ION SOURCES (L)
 DUOPLASMA TRONS"/CT OR "FLUORESCENT LAMPS"/CT OR "ELECTRIC LAMPS (L)
 FLUORESCENT, ENVELOPES"/CT OR "LAMPS (L) UV"/CT OR "UV LAMPS"/CT) OR
 ILLUMINATION/CT OR LAMP#### OR LIGHTING OR LIGHTS OR ILLUMINAT#####
 L40 83 S (LUMINAIRE/BI OR LUMINAIRES/BI OR LUMINAIRS/BI)
 L41 165106 S (L39 OR L40)
 L42 762 S L28 OR (L33 OR L34 OR L35 OR L36 OR L37 OR L38)
 L43 44 S L29(L) (BLUE OR GREEN OR WHITE)
 L44 89 S L42 AND (BLUEGREEN OR GREENBLUE OR BLUE OR GREEN OR WHITE)
 L45 196 S L29 AND (BLUEGREEN OR GREENBLUE OR BLUE OR GREEN OR WHITE)
 L46 196 S (L43 OR L44 OR L45)
 L47 38 S L46 AND L41
 L48 52 S L34 OR (L36 OR L37 OR L38) OR L47
 L49 44 S L46 AND (FLUORESC##### OR PHOSPHORESC#####)

FILE 'REGISTRY' ENTERED AT 08:48:09 ON 07 OCT 2003

L50 1 S MERCURY/CN

FILE 'HCAPLUS' ENTERED AT 08:48:09 ON 07 OCT 2003

L51 89975 S L50
 L52 10 S L46 AND (MERCURY OR L51 OR HG)
 L53 12 S L49 NOT L48
 L54 0 S L52 NOT L48

FILE 'REGISTRY' ENTERED AT 08:49:50 ON 07 OCT 2003

L55 49466 S MERCURY OR HG/MAC,ELS

FILE 'HCAPLUS' ENTERED AT 08:50:05 ON 07 OCT 2003

L56 3 S L55 AND L46
 L57 7 S L52 NOT L56
 L58 11 S L46 AND BLUE GREEN
 L59 52 S L48 OR L56 OR L57
 L60 4 S L58 NOT L59

APPLICANT L48 ANSWER 49 OF 52 HCAPLUS COPYRIGHT ACS on STN

AN 1973:90544 HCAPLUS
DN 78:90544
TI Energy transfer between antimony and manganese in the fluorophosphate phosphors
AU Soules, Thomas F.; Bateman, Robert L.; Hewes, Ralph A.; Kreidler, Eric R.
CS Light. Res. Tech. Serv. Oper., Gen. Electr. Co., Cleveland, OH, USA
SO Physical Review B: Solid State (1973), 7(4), 1657-67
CODEN: PLRBAQ; ISSN: 0556-2805
AB The kinetics of energy transfer from **Sb** sensitizer to **Mn** activator in fluorophosphate phosphors was studied. The transfer mechanism was identified as an exchange interaction by a comparison of the Mn concn. dependence of the exptl. quantum yield and emission decay curves with theor. calcs. for dipole-dipole, dipole-quadrupole, and exchange mechanisms. The Sb emission decay curve was exponential in the absence of Mn acceptors, with a lifetime of 7.65 +/- 0.05 .mu.sec. The subsequent Mn emission decay fits the sum of 2 exponentials with the main component having a lifetime of 14.3 +/- 0.5 msec and the minor component (which comprises only about 3% of the total Mn emission) having a lifetime of 1.9 +/- 0.1 msec.
IT 39290-80-7
RL: PRP (Properties)
(phosphors, antimony-manganese energy transfer in)
RN 39290-80-7 HCAPLUS
CN Antimony calcium manganese fluoride phosphate (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====+	=====+	=====
F	x	14762-94-8
O4P	x	14265-44-2
Ca	x	7440-70-2
Sb	x	7440-36-0
Mn	x	7439-96-5

HCAPLUS COPYRIGHT ACS on STN

AN 1967:494954 HCAPLUS
DN 67:494954
TI Stoichiometry of luminescent apatites
AU Rabatin, J. G.; Gillooly, G. R.; Hunter, J. W.
CS Gen. Elec. Co., Cleveland, OH, USA
SO Journal of the Electrochemical Society (1967), 114(9), 956-9
CODEN: JESOAN; ISSN: 0013-4651
AB Total chem. analysis of luminescent apatite together with quant. x-ray diffraction analysis for secondary phases have made it possible to delineate the max. permissible nonstoichiometry. Based on the accuracy of the various methods and expressed as a deficiency of Ca, the extent of nonstoichiometry is less than the absence of 1 Ca in every 380 Ca sites. Quant. exptl. evidence is also presented to support the hypothesis for charge compensation of **Sb** by a corresponding **O** substitution at halogen sites. 27 references.
IT 1306-05-4
RL: USES (Uses)
(stoichiometry of luminescent)
RN 1306-05-4 HCAPLUS
CN Fluorapatite (Ca5F(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====+	=====+	=====
F	1	14762-94-8
O4P	3	14265-44-2
Ca	5	7440-70-2

HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1963:63442 HCAPLUS DN 58:63442 OREF 58:10828c-d

TI Formation of color centers in calcium halophosphates

AU Apple, E. F.

CS Gen. Elec. Co., Cleveland, OH

SO Journal of the Electrochemical Society (1963), 110, 374-80

CODEN: JESOAN; ISSN: 0013-4651

AB The effects were studied of Cl/F ratio, stoichiometry,

incorporation of Mn, Sb, and Cd, and of thermal

treatment on the formation of color centers in calcium halophosphates.

Short wavelength ultraviolet radiation, or the discharge from a Tesla coil, induces three color centers in the 2500-7000 Å. region. The

spectral distributions of these centers depend on the **Cl/F ratio**.

Incorporation of **Sb** and Cd and (or) rapid quenching of the samples from elevated temps. leads to a decrease in induced color center formation.

IT 12015-73-5, Calcium fluoride phosphate, $\text{Ca}_5\text{F}(\text{PO}_4)_3$

(and solid soln. with $\text{Ca}_5(\text{PO}_4)_3\text{Cl}$, color center formation in, by elec. discharge or ultraviolet irradiation)

IT 7440-36-0, Antimony

IT 7439-96-5, Manganese

IT 12015-72-4, Calcium chloride phosphate, $\text{Ca}_5\text{Cl}(\text{PO}_4)_3$

(solid soln. with $\text{Ca}_5\text{F}(\text{PO}_4)_3$, color center formation in, by elec. discharge and ultraviolet irradiation)

IT 12015-73-5, Calcium fluoride phosphate, $\text{Ca}_5\text{F}(\text{PO}_4)_3$

(and solid soln. with $\text{Ca}_5(\text{PO}_4)_3\text{Cl}$, color center formation in, by elec. discharge or ultraviolet irradiation)

RN 12015-73-5 HCAPLUS

CN Calcium fluoride phosphate ($\text{Ca}_5\text{F}(\text{PO}_4)_3$)

Component	Ratio	Component Registry Number
=====+=====+=====		
F	1	14762-94-8
O4P	3	14265-44-2
Ca	5	7440-70-2

IT 7440-36-0, Antimony

(calcium halide phosphates contg., color center formation in, by elec. discharge or ultraviolet irradiation)

RN 7440-36-0 HCAPLUS

CN Antimony (8CI, 9CI) (CA INDEX NAME)

Sb

IT 7439-96-5, Manganese

(phosphors contg., color center formation in, by elec. discharge or ultraviolet irradiation)

RN 7439-96-5 HCAPLUS

CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mn

IT 12015-72-4, Calcium chloride phosphate, $\text{Ca}_5\text{Cl}(\text{PO}_4)_3$

(solid soln. with $\text{Ca}_5\text{F}(\text{PO}_4)_3$, color center formation in, by elec. discharge and ultraviolet irradiation)

RN 12015-72-4 HCAPLUS

CN Calcium chloride phosphate ($\text{Ca}_5\text{Cl}(\text{PO}_4)_3$) (6CI, 7CI, 8CI, 9CI) (CA INDEX

NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
Cl	1	22537-15-1
O4P	3	14265-44-2
Ca	5	7440-70-2

 L48 ANSWER 2 OF 52 HCAPLUS COPYRIGHT ACS on STN
 AN 2003:319229 HCAPLUS
 DN 138:328734
 TI Phosphor composition for low-pressure gas discharge lamps
 IN Gruber, Wolfgang; Schiplage, Matthias; Zachau, Martin
 PA Patent-Treuhand-Gesellschaft Fuer Elektrisch Gluhlampen mbH, Germany
 PATENT NO. KIND DATE APPLICATION NO. DATE

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PI	US 2003076029	A1	20030424	US 2002-271719 20021017
	DE 10152217	A1	20030430	DE 2001-10152217 20011023
	EP 1306885	A2	20030502	EP 2002-22653 20021009
	JP 2003193046	A2	20030709	JP 2002-306714 20021022
PRAI	DE 2001-10152217	A	20011023	

AB The phosphor compn. for low-pressure gas discharge lamps with a high light efficiency for generating radiation with a color temp. of >5000 K and a very good general color rendering index Ra of >90 includes at least 1 halophosphate phosphor, a phosphor which emits in the red wavelength region and a phosphor which emits in the blue-green wavelength region. According to the invention the phosphor compn. contains BaMgAl10 O17 :Eu and a Tb-doped green-emitting phosphor.

IT Electric discharge lamps

Phosphors (phosphor compn. for low-pressure gas discharge lamps)

IT 7439-96-5, Manganese, uses 7440-27-9, Terbium, uses

7440-36-0, Antimony, uses 7440-53-1, Europium, uses

RL: MOA (Modifier or additive use); USES (Uses)

(phosphor compn. for low-pressure gas discharge lamps)

IT 75535-31-8, Calcium chloride fluoride phosphate (Ca5(Cl,F)(PO4)3)

RL: DEV (Device component use); USES (Uses)

(Sb- and Mn-doped; phosphor compn. for low-pressure gas discharge lamps)

RN 75535-31-8 HCAPLUS

CN Calcium chloride fluoride phosphate (Ca5(Cl,F)(PO4)3)

Component	Ratio	Component Registry Number
=====	=====	=====
Cl	0 - 1	22537-15-1
F	0 - 1	14762-94-8
O4P	3	14265-44-2
Ca	5	7440-70-2

IT 7439-96-5, Manganese, uses 7440-36-0, Antimony, uses

RL: MOA (Modifier or additive use); USES (Uses)

(phosphor compn. for low-pressure gas discharge lamps)

RN 7439-96-5 HCAPLUS

CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mr.

RN 7440-36-0 HCAPLUS

CN Antimony (8CI, 9CI) (CA INDEX NAME)

Sb

HCAPLUS COPYRIGHT 2003 ACS on STN

AN 2003:4993 HCAPLUS

DN 138:80439

TI Low pressure gas **discharge** lamp with fluorescent coating

IN Juestel, Thomas; Hilbig, Rainer; Feldmann, Claus; Jungk, Hans-Otto; Mayr, Walter

PA Philips Corporate Intellectual Property G.m.b.H., Germany; Koninklijke

Philips Electronics N.V.

PATENT NO. KIND DATE APPLICATION NO. DATE

PI	EP 1271617	A2	20030102	EP 2002-100717	20020618
	DE 10129630	A1	20030102	DE 2001-10129630	20010620
	CN 1395285	A	20030205	CN 2002-130391	20020617
	US 2003011310	A1	20030116	US 2002-175424	20020619
	JP 2003022783	A2	20030124	JP 2002-179702	20020620
PRAI	DE 2001-10129630	A	20010620		

AB Low-pressure **mercury** vapor **discharge** lamps are described which are provided with a phosphor coating comprising at least a UV-C region-emitting phosphor and a phosphor which can be stimulated by the UV radiation.

ST low pressure **mercury** vapor **discharge** lamp phosphor coating; **discharge** lamp UV emitting UV stimuable phosphor coating

IT Fluorescent lamps
(low-pressure **mercury** vapor **discharge** lamps with fluorescent coatings comprising UV-emitting and UV-stimuable phosphors)

IT 75535-31-8, Calcium chloride fluoride phosphate (Ca₅Cl₁₀-1F₀-1(PO₄)₃)

RL: DEV (Device component use); USES (Uses)

(antimony- and manganese-doped; low-pressure **mercury** vapor **discharge** lamps with fluorescent coatings comprising UV-emitting and UV-stimuable phosphors)

RN 75535-31-8 HCAPLUS

CN Calcium chloride fluoride phosphate (Ca₅(Cl,F)(PO₄)₃) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Cl	0 - 1	22537-15-1
F	0 - 1	14762-94-8
O4P	3	14265-44-2
Ca	5	7440-70-2

IT 7439-96-5, Manganese, uses 7440-36-0, Antimony, uses

16397-91-4, Manganese +2, uses

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(low-pressure **mercury** vapor **discharge** lamps with fluorescent coatings comprising UV-emitting and UV-stimuable phosphors)

RN 7439-96-5 HCAPLUS

CN Manganese (8CI, 9CI) (CA INDEX NAME)

Xn

RN 7440-36-0 HCAPLUS

10/080,226 10/7/2003

CN Antimony (8CI, 9CI) (CA INDEX NAME)

Sb

RN 16397-91-4 HCAPLUS

CN Manganese, ion (Mn2+) (8CI, 9CI) (CA INDEX NAME)

Mn2+

L48 ANSWER 3 OF 52 HCAPLUS COPYRIGHT ACS on STN

AN 2002:889247 HCAPLUS

DN 137:377215

TI Single-component arctic bright calcium halophosphate phosphor

IN Milewski, Peter

PA Koninklijke Philips Electronics N.V., Neth.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6483234	B1	20021119	US 2000-651047	20000830
US 2003102461	A1	20030605	US 2002-267243	20021009
US 2000-651047	A3	20000830		

PI US 6483234 B1 20021119 US 2000-651047 20000830

US 2003102461 A1 20030605 US 2002-267243 20021009

PRAI US 2000-651047 A3 20000830

AB Single-component ARTIC BRITE calcium halophosphate phosphors are described which have CIE color coordinates of X=346 and Y=359 and a CRI of .gtoreq.69; preferably the phosphors are described by the general formula $\text{Ca}_{5-x-y}\text{Sb}_x\text{Mn}_y(\text{PO}_4)_3\text{Cl}_z\text{F}_{1-x-z}$ ($x = \text{.apprx.}0.032-0.037$; $y = \text{.apprx.}0.06-0.14$; and $z = \text{.apprx.}0.025-0.05$). Low-pressure discharge lamps utilizing the .gtoreq.1 layer of the phosphors are also described.

IT Electric discharge lamps

(low-pressure, discharge; calcium halophosphate phosphors and low-pressure discharge lamps using them)

IT 475473-41-7 475473-42-8

RL: DEV (Device component use); USES (Uses)

(calcium halophosphate phosphors and low-pressure discharge lamps using them)

RN 475473-41-7 HCAPLUS

CN Antimony calcium manganese chloride fluoride phosphate

(Sb0.04Ca4.52Mn0.06Cl0.05F0.43(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Cl	0.05	22537-15-1
F	0.43	14762-94-8
O4P	3	14265-44-2
Ca	4.52	7440-70-2
Sb	0.04	7440-36-0
Mn	0.06	7439-96-5

RN 475473-42-8 HCAPLUS

CN Antimony calcium manganese chloride fluoride phosphate

(Sb0.03Ca4.52Mn0.14Cl0.02F0.45(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Cl	0.02	22537-15-1
F	0.45	14762-94-8
O4P	3	14265-44-2
Ca	4.52	7440-70-2
Sb	0.03	7440-36-0
Mn	0.14	7439-96-5

 L48 ANSWER 4 OF 52 HCAPLUS COPYRIGHT ACS on STN
 AN 2002:865561 HCAPLUS
 DN 137:360105
 TI Phosphor compositions for discharge lamps
 IN Hoffmann, Roland; Schneider, Wolfgang; Zachau, Martin
 PA Patent-Treuhand-Gesellschaft fuer Elektrische Gluehlampen m.b.H., Germany
 PATENT NO. KIND DATE APPLICATION NO. DATE

 PI DE 10122850 A1 20021114 DE 2001-10122850 20010511
 PRAI DE 2001-10122850 20010511
 AB Phosphor compns. for use in low-pressure discharge lamps which
 produce light with a color temp. of 5400 K with a variation of .1toeq.200
 K and chromaticity coordinates within the region defined by the points
 (0.325, 0.340), (0.325, 0.360), (0.345, 0.360), and (0.345, 0.340) are
 described which comprise Sr6BP5O20:Eu with Sr4Al14O25:Eu. The compns. may
 addnl. comprise Ca10(PO4)6F2:Sb,Mn,Cl,
 Gd(Zn,Mg)B5O10:Ce,Mn, and a Tb-doped green phosphor
 (e.g., CeMgAl11O19:Tb, LaPO4:Tb, or GdMgB5O10:Ce,Tb).
 IT Phosphors
 (phosphor compns. contg. europium-doped strontium aluminate and
 strontium borophosphate for discharge lamps)
 IT 12015-73-5, Calcium phosphate fluoride (Ca10(PO4)6F2)
 RL: DEV (Device component use); USES (Uses)
 (antimony- and chlorine- and manganese-doped;
 phosphor compns. contg. europium-doped strontium aluminate and
 strontium borophosphate for discharge lamps)
 IT 12015-73-5, Calcium phosphate fluoride (Ca10(PO4)6F2)
 RL: DEV (Device component use); USES (Uses)
 (antimony- and chlorine- and manganese-doped;
 phosphor compns. contg. europium-doped strontium aluminate and
 strontium borophosphate for discharge lamps)
 RN 12015-73-5 HCAPLUS
 CN Calcium fluoride phosphate (Ca5F(PO4)3) (6CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
F	1	14762-94-8
O4P	3	14265-44-2
Ca	5	7440-70-2

IT 7439-96-5, Manganese, uses 7440-36-0,
 Antimony, uses
 RL: DEV (Device component use); MOA (Modifier or additive use); USES
 (Uses)
 (phosphor compns. contg. europium-doped strontium aluminate and
 strontium borophosphate for discharge lamps)
 RN 7439-96-5 HCAPLUS
 CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mn

RN 7440-36-0 HCAPLUS
 CN Antimony (8CI, 9CI) (CA INDEX NAME)

Sb

 L48 ANSWER 6 OF 52 HCAPLUS COPYRIGHT ACS on STN

AN 2002:502874 HCAPLUS

DN 137:54431

TI High-efficiency light source

IN Akashi, Izumi; Shimizu, Masanori; Sakamoto, Shoetsu

PA Matsushita Electric Industrial Co., Ltd., Japan

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6414426	B1	20020702	US 1999-171078	19990323
CA 2206894	AA	19970327	CA 1996-2206894	19960913
CA 2206894	C	20020716		
WO 9711480	A1	19970327	WO 1996-JP2618	19960913
EP 794556	A1	19970910	EP 1996-930384	19960913
CN 1167542	A	19971210	CN 1996-191331	19960913
CN 1094649	B	20021120		
JP 3076375	B2	20000814	JP 1997-512584	19960913
EP 1209722	A2	20020529	EP 2001-130081	19960913
US 6224240	B1	20010501	US 1997-836842	19970804
WO 9836441	A1	19980820	WO 1998-JP548	19980210
JP 2001060450	A2	20010306	JP 2000-229616	19980210
JP 2001060449	A2	20010306	JP 2000-229617	19980210
US 6153971	A	20001128	US 1999-329419	19990610

PI US 6414426 B1 20020702 US 1999-171078 19990323
 CA 2206894 AA 19970327 CA 1996-2206894 19960913
 CA 2206894 C 20020716
 WO 9711480 A1 19970327 WO 1996-JP2618 19960913
 EP 794556 A1 19970910 EP 1996-930384 19960913
 CN 1167542 A 19971210 CN 1996-191331 19960913
 CN 1094649 B 20021120
 JP 3076375 B2 20000814 JP 1997-512584 19960913
 EP 1209722 A2 20020529 EP 2001-130081 19960913
 US 6224240 B1 20010501 US 1997-836842 19970804
 WO 9836441 A1 19980820 WO 1998-JP548 19980210
 JP 2001060450 A2 20010306 JP 2000-229616 19980210
 JP 2001060449 A2 20010306 JP 2000-229617 19980210
 US 6153971 A 20001128 US 1999-329419 19990610

AB Fluorescent lamps that ensures categorical color perception for surface colors of at least red, **green**, **blue**, yellow and **white**, while improving the luminous efficiency in scotopic vision and mesopic vision or in a wide visual field which employ a first phosphor that has a peak emission wavelength in the 530-580 nm region, a second phosphor that has a peak emission wavelength in the 600-650 nm; and a third phosphor that has a peak emission in the 420-530 nm region are described in which dominant radiation is obtained from the first and the second phosphors (e.g., the flux emitted by the third phosphor is 4-40% of the total flux emitted by the first and the second phosphors). A dual peak emitting phosphor that has a first peak emission in the 530-580 nm range and a second peak emission in the 600-650 nm range may be used instead of distinct first and second phosphors. Preferably, the correlated color temp. of the lamp light color is .gtoreq.3500 K; and Duv, in which Duv is 1000 times the distance of the color point from the Planckian locus on the CIE 1960 chromaticity diagram, is 5-70.

IT Fluorescent lamps

Phosphors

(fluorescent lamps with phosphor mixts. optimized for color perception)

IT 75535-31-8, Calcium chloride fluoride phosphate

(Ca₅Cl₁₀-1F₀-1(PO₄)₃)

RL: DEV (Device component use); USES (Uses)

(antimony- and manganese-activated; fluorescent lamps with phosphor mixts. optimized for color perception)

IT 7439-96-5, Manganese, uses 7440-27-9, Terbium, uses

7440-36-0, Antimony, uses 7440-45-1, Cerium, uses

7440-53-1, Europium, uses

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(phosphors activated with; fluorescent lamps with phosphor mixts. optimized for color perception)

IT 75535-31-8, Calcium chloride fluoride phosphate

(Ca₅Cl₁₀-1F₀-1(PO₄)₃)

RL: DEV (Device component use); USES (Uses)

(antimony- and manganese-activated; fluorescent lamps with phosphor mixts. optimized for color perception)

RN 75535-31-8 HCAPLUS

CN Calcium chloride fluoride phosphate (Ca₅(Cl,F)(PO₄)₃) (9CI) (CA INDEX NAME)

Component	Ratio	Component
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10/080,226 10/7/2003

		Registry Number
=====	=====	=====
Cl	0 - 1	22537-15-1
F	0 - 1	14762-94-8
O4P	3	14265-44-2
Ca	5	7440-70-2

IT 7439-96-5, Manganese, uses 7440-36-0,
 Antimony, uses
 RL: DEV (Device component use); MOA (Modifier or additive use); USES
 (Uses)
 (phosphors activated with; fluorescent lamps with phosphor
 mixts. optimized for color perception)
 RN 7439-96-5 HCAPLUS
 CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mr.

RN 7440-36-0 HCAPLUS
 CN Antimony (8CI, 9CI) (CA INDEX NAME)

sb

 L48 ANSWER 7 OF 52 HCAPLUS COPYRIGHT ACS on STN
 AN 2002:487867 HCAPLUS
 DN 137:54410
 TI Fluorescent colortone lamp with reduced mercury
 IN Vose, Kelly S.; Oomen, Emmanuel W. J. L.; Carter, Brett A.
 PA Koninklijke Philips Electronics N.V., Neth.
 PATENT NO. KIND DATE APPLICATION NO. DATE

 PI WO 2002050871 A1 20020627 WO 2001-IB2447 20011207
 US 2002113554 A1 20020822 US 2000-739515 20001218
 US 6531823 B2 20030311
 EP 1346396 A1 20030924 EP 2001-271649 20011207
 PRAI US 2000-739515 A 20001218
 WO 2001-IB2447 W 20011207
 AB An elec. fluorescent lamp is described comprising an envelope
 having an inner surface coated with alumina and enclosing a discharge
 space filled with mercury having a wt. <15 mg; at least one electrode for
 generating UV in the discharge space; and a phosphor layer formed over the
 inner surface to convert the UV to visible light; wherein the phosphor
 layer is formulated to provide a color rendering index >90 at a color
 temp. = .apprx.7500K. The phosphor layer is a mixt. of 3 phosphors,
 namely, blue luminescing Blue Halophosphor (BH),
 red-luminescing Ce Gd Mg Borate (CBTM), and 3000K-luminescing Ca
 Halophosphor, also referred to as Warm White (WW).
 IT Fluorescent lamps
 (fluorescent colortone lamp with reduced mercury)
 IT 7439-96-5, Manganese, uses 7440-36-0,
 Antimony, uses
 RL: DEV (Device component use); MOA (Modifier or additive use); USES
 (Uses)
 (fluorescent colortone lamp with reduced mercury)
 IT 12015-73-5, Calcium fluoride phosphate (Ca10F2(PO4)6)
 75535-31-8, Calcium chloride fluoride phosphate
 (Ca5Cl10-1FO-1(PO4)3)
 RL: DEV (Device component use); USES (Uses)

10/080,226 10/7/2003

(fluorescent colortone lamp with reduced mercury)

RN 12015-73-5 HCAPLUS

CN Calcium fluoride phosphate (Ca₅F(PO₄)₃) (6CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
F	1	14762-94-8
O4P	3	14265-44-2
Ca	5	7440-70-2

RN 75535-31-8 HCAPLUS

CN Calcium chloride fluoride phosphate (Ca₅(Cl,F)(PO₄)₃) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
Cl	0 - 1	22537-15-1
F	0 - 1	14762-94-8
O4P	3	14265-44-2
Ca	5	7440-70-2

IT 7439-96-5, Manganese, uses 7440-36-0,

Antimony, uses

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(fluorescent colortone lamp with reduced mercury)

RN 7439-96-5 HCAPLUS

CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mn

RN 7440-36-0 HCAPLUS

CN Antimony (8CI, 9CI) (CA INDEX NAME)

Sb

L48 ANSWER 8 OF 52 HCAPLUS COPYRIGHT ACS on STN

AN 2002:487866 HCAPLUS

DN 137:54409

TI Fluorescent colortone lamp with reduced mercury

IN Vose, Kelly S.; Carter, Brett A.; Oomen, Emmanuel W. J. L.

PA Koninklijke Philips Electronics N.V., Neth.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2002050870	A1	20020627	WO 2001-IB2420	20011210
	US 2002117966	A1	20020829	US 2000-739514	20001218
	US 6472812	B2	20021029		
	EP 1346395	A1	20030924	EP 2001-271648	20011210
PRAI	US 2000-739514	A	20001218		
	WO 2001-IB2420	W	20011210		

AB An elec. lamp is described comprising an envelope having an inner surface and enclosing a discharge space filled with mercury having a wt. of less than 15 mg; at least one electrode for generating UV in the discharge space; and a phosphor layer formed over the inner surface to convert the UV to visible light; wherein the phosphor layer is formulated to provide a color rendering index >90, at a color temp. = .apprx.5000K.

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The phosphor layer is a mixt. of 4 phosphors, namely, blue luminescing Blue Halophosphor (BH), red-luminescing Yittrium Oxide (YOX), 3000K-luminescing Ca Halophosphor, also referred to as Warm White (WW) and green-luminescing Zn Silicate (ZS).

ST fluorescent lamp reduced mercury

IT Fluorescent lamps

(fluorescent colortone lamp with reduced mercury)

IT 1314-36-9, Yttrium oxide (Y2O3), uses 1344-28-1, Alumina, uses 7439-97-6, Mercury, uses 12015-73-5, Calcium fluoride phosphate (Ca5F(PO4)3) 13597-65-4, Zinc silicate (Zn2SiO4) 75535-31-8,

Calcium chloride fluoride phosphate (Ca5(Cl,F)(PO4)3)

RL: DEV (Device component use); USES (Uses)

(fluorescent colortone lamp with reduced mercury)

IT 7439-96-5, Manganese, uses 7440-36-0,

Antimony, uses 7440-53-1, Europium, uses

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(fluorescent colortone lamp with reduced mercury)

IT 12015-73-5, Calcium fluoride phosphate (Ca5F(PO4)3)

75535-31-8, Calcium chloride fluoride phosphate (Ca5(Cl,F)(PO4)3)

RL: DEV (Device component use); USES (Uses)

(fluorescent colortone lamp with reduced mercury)

RN 12015-73-5 HCAPLUS

CN Calcium fluoride phosphate (Ca5F(PO4)3) (6CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
F	1	14762-94-8
O4P	3	14265-44-2
Ca	5	7440-70-2

RN 75535-31-8 HCAPLUS

CN Calcium chloride fluoride phosphate (Ca5(Cl,F)(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
Cl	0 - 1	22537-15-1
F	0 - 1	14762-94-8
O4P	3	14265-44-2
Ca	5	7440-70-2

IT 7439-96-5, Manganese, uses 7440-36-0,

Antimony, uses

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(fluorescent colortone lamp with reduced mercury)

RN 7439-96-5 HCAPLUS

CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mn

RN 7440-36-0 HCAPLUS

CN Antimony (8CI, 9CI) (CA INDEX NAME)

Sb

APPLICANT L48 ANSWER 9 OF 52 HCAPLUS COPYRIGHT ACS on STN

AN 2002:169240 HCAPLUS

DN 136:223937

TI Fluorescent lamp for grocery lighting employing a phosphor layer containing a blend of one broad-band red-emitting phosphor and one broad-band blue-green-emitting phosphor

IN Soules, Thomas Frederick; Yuet, Pak K.

PA General Electric Company, USA

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1184892	A2	20020306	EP 2001-307082	20010820
US 6452324	B1	20020917	US 2000-650897	20000830
JP 2002198009	A2	20020712	JP 2001-259092	20010829
PRAI US 2000-650897	A	20000830		

PI EP 1184892 A2 20020306 EP 2001-307082 20010820

US 6452324 B1 20020917 US 2000-650897 20000830

JP 2002198009 A2 20020712 JP 2001-259092 20010829

PRAI US 2000-650897 A 20000830

AB Mercury vapor discharge lamps are described which comprise a glass envelope, means for providing a discharge, a discharge-sustaining fill of mercury and an inert gas sealed inside the envelope, and a phosphor-contg. layer coated inside the glass envelope and contg. a blend of two phosphors, the first phosphor having an emission band with a max. between 610 and 645 nm and having a width at half max. of .gtoreq. 50 nm, the second phosphor having an emission band with a max. between 465 and 495 nm and having a width at half max. of .gtoreq. 50 nm. A method for illuminating meat using the fluorescent lamp is also discussed. Thus, the performance of the fluorescent lamp employing (Sr0.87,Mg0.12)3(PO4)2:Sn0.042+ and Ca4.96(PO4)3F:Sb0.043+ as phosphors was evaluated.

ST fluorescent lamp phosphor blend grocery lighting; meat
lighting discharge fluorescent lamp red
bluegreen phosphor blend

IT Fluorescent lamps

Phosphors

(low-pressure mercury vapor discharge fluorescent lamps for grocery lighting employing a phosphor layer contg. a blend of one broad-band red-emitting phosphor and one broad-band blue-green-emitting phosphor)

IT Electric discharge lamps

(low-pressure; low-pressure mercury vapor discharge fluorescent lamps for grocery lighting employing a phosphor layer contg. a blend of one broad-band red-emitting phosphor and one broad-band blue-green-emitting phosphor)

IT 12015-73-5, Calcium fluoride phosphate Ca5F(PO4)3

RL: DEV (Device component use); USES (Uses)

(antimony-doped phosphor; low-pressure mercury vapor discharge fluorescent lamps for grocery lighting employing a phosphor layer contg. a blend of one broad-band red-emitting phosphor and one broad-band blue-green-emitting phosphor)

IT 23713-48-6, Antimony(3+), properties

RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); USES (Uses)

(blue-green phosphor dopant; low-pressure mercury vapor discharge fluorescent lamps for grocery lighting employing a phosphor layer contg. a blend of one broad-band red-emitting phosphor and one broad-band blue-green-emitting phosphor)

IT 402587-62-6, Antimony calcium fluoride phosphate

(Sb0-0.1Ca4.9-5F(PO4)3)

RL: DEV (Device component use); USES (Uses)

(blue-green phosphor; low-pressure mercury vapor discharge fluorescent lamps for grocery lighting employing a phosphor layer contg. a blend of one broad-band red-emitting phosphor and one broad-band blue-green-emitting phosphor)

IT 402587-61-5, Antimony calcium fluoride phosphate

(Sb0.04Ca4.96F(PO4)3)

RL: DEV (Device component use); PRP (Properties); USES (Uses)

(blue-green phosphor; low-pressure mercury vapor

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discharge fluorescent lamps for grocery lighting
employing a phosphor layer contg. a blend of one broad-band
red-emitting phosphor and one broad-band blue-green
-emitting phosphor)

IT 7440-36-0, Antimony, properties
RL: DEV (Device component use); MOA (Modifier or additive use); PRP
(Properties); USES (Uses)
(low-pressure mercury vapor discharge fluorescent lamps for
grocery lighting employing a phosphor layer contg. a blend of
one broad-band red-emitting phosphor and one broad-band blue-
green-emitting phosphor)

IT 7439-96-5, Manganese, uses 7440-45-1, Cerium, uses
7440-53-1, Europium, uses 16397-91-4, Manganese(2+), uses
16910-54-6, Europium(2+), uses 18923-26-7, Cerium(3+), uses
RL: DEV (Device component use); MOA (Modifier or additive use); USES
(Uses)
(phosphor doped with; low-pressure mercury vapor discharge fluorescent
lamps for grocery lighting employing a phosphor layer
contg. a blend of one broad-band red-emitting phosphor and one
broad-band blue-green-emitting phosphor)

IT 12015-73-5, Calcium fluoride phosphate $\text{Ca}_5\text{F}(\text{PO}_4)_3$
RL: DEV (Device component use); USES (Uses)
(antimony-doped phosphor; low-pressure mercury vapor
discharge fluorescent lamps for grocery lighting
employing a phosphor layer contg. a blend of one broad-band
red-emitting phosphor and one broad-band blue-green
-emitting phosphor)

RN 12015-73-5 HCAPLUS
CN Calcium fluoride phosphate ($\text{Ca}_5\text{F}(\text{PO}_4)_3$) (6CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
F	1	14762-94-8
O4P	3	14265-44-2
Ca	5	7440-70-2

IT 402587-62-6, Antimony calcium fluoride phosphate
($\text{Sb}_0\text{-}0.1\text{Ca}_4.9\text{-}5\text{F}(\text{PO}_4)_3$)
RL: DEV (Device component use); USES (Uses)
(blue-green phosphor; low-pressure mercury vapor
discharge fluorescent lamps for grocery lighting
employing a phosphor layer contg. a blend of one broad-band
red-emitting phosphor and one broad-band blue-green
-emitting phosphor)

RN 402587-62-6 HCAPLUS
CN Antimony calcium fluoride phosphate ($\text{Sb}_0\text{-}0.1\text{Ca}_4.9\text{-}5\text{F}(\text{PO}_4)_3$) (9CI) (CA
INDEX NAME)

Component	Ratio	Component Registry Number
F	1	14762-94-8
O4P	3	14265-44-2
Ca	4.9 - 5	7440-70-2
Sb	0 - 0.1	7440-36-0

IT 402587-61-5, Antimony calcium fluoride phosphate
($\text{Sb}_0.04\text{Ca}_4.96\text{F}(\text{PO}_4)_3$)
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(blue-green phosphor; low-pressure mercury vapor
discharge fluorescent lamps for grocery lighting
employing a phosphor layer contg. a blend of one broad-band
red-emitting phosphor and one broad-band blue-green
-emitting phosphor)

RN 402587-61-5 HCAPLUS
CN Antimony calcium fluoride phosphate ($\text{Sb}_0.04\text{Ca}_4.96\text{F}(\text{PO}_4)_3$) (9CI) (CA INDEX
NAME)

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Component	Ratio	Component Registry Number
=====	=====	=====
F	1	14762-94-8
O4P	3	14265-44-2
Ca	4.96	7440-70-2
Sb	0.04	7440-36-0

IT 7440-36-0, Antimony, properties
 RL: DEV (Device component use); MOA (Modifier or additive use); PRP
 (Properties); USES (Uses)
 (low-pressure mercury vapor discharge fluorescent lamps for
 grocery lighting employing a phosphor layer contg. a blend of
 one broad-band red-emitting phosphor and one broad-band blue-
 green-emitting phosphor)
 RN 7440-36-0 HCAPLUS
 CN Antimony (8CI, 9CI) (CA INDEX NAME)

Sb

IT 7439-96-5, Manganese, uses
 RL: DEV (Device component use); MOA (Modifier or additive use); USES
 (Uses)
 (phosphor doped with; low-pressure mercury vapor discharge fluorescent
 lamps for grocery lighting employing a phosphor layer
 contg. a blend of one broad-band red-emitting phosphor and one
 broad-band blue-green-emitting phosphor)
 RN 7439-96-5 HCAPLUS
 CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mn.

 L48 ANSWER 10 OF 52 HCAPLUS COPYRIGHT ACS on STN
 AN 2001:798663 HCAPLUS
 DN 135:350327
 TI Fluorescent lamp
 IN Shimomura, Yoko; Shimizu, Masanori; Arakawa, Takeshi; Tanabe, Yoshinori
 PATENT NO. KIND DATE APPLICATION NO. DATE

 PI US 2001035710 A1 20011101 US 2001-814035 20010321
 JP 2001338613 A2 20011207 JP 2001-49898 20010226
 JP 3415596 B2 20030609
 CN 1319874 A 20011031 CN 2001-110003 20010323
 PRAI JP 2000-84266 A 20000324
 AB A fluorescent lamp, wherein a chromaticity value (x, y) of a
 light source color is in a range surrounded by a point A (0.251, 0.343), a
 point B (0.285, 0.332), a point C (0.402, 0.407) and a point D (0.343,
 0.433), includes a phosphor blend in an inner face of a luminous tube, the
 phosphor blend comprising an Sb and Mn activated Ca
 halophosphate phosphor, a rare earth phosphor emitting green,
 and a rare earth phosphor emitting blue or red.
 ST fluorescent lamp calcium halophosphate phosphor antimony
 manganese
 IT Phosphors
 (calcium halophosphate; phosphor for fluorescent lamp)
 IT Fluorescent lamps
 (phosphor for fluorescent lamp)
 IT 7439-96-5, Manganese, uses 7440-27-9, Terbium, uses

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7440-36-0, Antimony, uses 7440-45-1, Cerium, uses
 7440-53-1, Europium, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (activator; phosphor for fluorescent lamp)
 IT 7439-96-5, Manganese, uses 7440-36-0,
 Antimony, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (activator; phosphor for fluorescent lamp)
 RN 7439-96-5 HCAPLUS
 CN Manganese (8CI, 9CI) (CA INDEX NAME)

Er

RN 7440-36-0 HCAPLUS
 CN Antimony (8CI, 9CI) (CA INDEX NAME)

Sb

IT 130844-73-4, Calcium chloride fluoride phosphate
 (Ca₄(Cl,F)₂(PO₄)₂)
 RL: DEV (Device component use); USES (Uses)
 (phosphor for fluorescent lamp)
 RN 130844-73-4 HCAPLUS
 CN Calcium chloride fluoride phosphate (Ca₄(Cl,F)₂(PO₄)₂) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Cl	0 - 2	22537-15-1
F	0 - 2	14762-94-8
O4P	2	14265-44-2
Ca	4	7440-70-2

 L48 ANSWER 11 OF 52 HCAPLUS COPYRIGHT ACS on STN
 AN 2000:900362 HCAPLUS
 DN 134:49067
 TI White light source using carbon nanotubes and fabrication method
 thereof

IN Lee, Cheol-Jin; Cho, Young-Sang; Yoo, Jae-Eun
 PA Iljin Nanotech Co., Ltd., S. Korea

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1061555	A1	20001220	EP 2000-305140	20000616
	JP 2001052652	A2	20010223	JP 2000-179788	20000615
	CN 1280382	A	20010117	CN 2000-107813	20000616
PRAI	KR 1999-23051	A	19990618		
	KR 2000-30354	A	20000602		

AB White light sources are described which comprise a metal cathode
 film formed on a lower substrate; a conductive polymer film pattern formed
 on the metal film (e.g., in openings in an insulating film formed on the
 metal film); carbon nanotubes for emitting electrons, the nanotubes being
 substantially vertically bound with the conductive polymer film pattern so
 that one end thereof is exposed above the surface of the conductive
 polymer film pattern; spacers mounted on the metal film; and a transparent
 upper substrate on which is formed a transparent electrode to which a
 fluorescent body is attached, the transparent upper substrate being
 mounted on the spacers so that the fluorescent body faces the carbon

nanotubes. The metal film may be formed of Cr, Ti, TiN, W, or Al. Methods of fabricating the light sources are described which entail forming the metal cathode film on a lower substrate; forming an insulating film pattern on the metal film, the insulating film pattern having a plurality of openings selectively exposing the metal film; filling the openings with a conductive polymer film pattern; scattering carbon nanotubes on the openings and sinking the carbon nanotubes in the conductive polymer film pattern so that the carbon nanotubes vertically stand with one end being exposed; hardening the conductive polymer film pattern to bind the sunken carbon nanotubes with the conductive polymer film pattern; installing spacers on the insulating film pattern; mounting a transparent upper substrate on which is formed a transparent electrode to which a fluorescent body is attached on the spacers so that the fluorescent body faces the carbon nanotubes; and sealing the transparent upper substrate with the lower substrate.

IT **Electric lamps**

(cathodoluminescent; **white** light sources using cathode structures with carbon nanotubes embedded in conductive polymers and their fabrication)

IT **7439-96-5, Manganese, uses 7440-36-0, Antimony, uses**

RL: DEV (Device component use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses) (calcium chloride fluoride phosphate activated with; **white** light sources using cathode structures with carbon nanotubes embedded in conductive polymers and their fabrication)

IT **12394-20-6, Calcium chloride fluoride phosphate (Ca₁₀ClF(PO₄)₆)**

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses) (**antimony-** and **manganese-**activated; **white** light sources using cathode structures with carbon nanotubes embedded in conductive polymers and their fabrication)

RN **12394-20-6 HCAPLUS**CN **Calcium chloride fluoride phosphate (Ca₁₀ClF(PO₄)₆) (7CI, 9CI) (CA INDEX NAME)**

Component	Ratio	Component Registry Number
=====+=====+=====		
Cl	1	22537-15-1
F	1	14762-94-8
O4P	6	14265-44-2
Ca	10	7440-70-2

IT **7439-96-5, Manganese, uses 7440-36-0, Antimony, uses**

RL: DEV (Device component use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses) (calcium chloride fluoride phosphate activated with; **white** light sources using cathode structures with carbon nanotubes embedded in conductive polymers and their fabrication)

RN **7439-96-5 HCAPLUS**CN **Manganese (8CI, 9CI) (CA INDEX NAME)**

M:

RN **7440-36-0 HCAPLUS**CN **Antimony (8CI, 9CI) (CA INDEX NAME)**

Sb

 L48 ANSWER 12 OF 52 HCAPLUS COPYRIGHT ACS on STN

AN 2000:900361 HCAPLUS

DN 134:49066

TI **White** light source using carbon nanotubes and fabrication method thereof

IN Lee, Cheol-Jin; Yoo, Jae-Eun

PA Iljin Nanotech Co., Ltd., S. Korea

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1061554	A1	20001220	EP 2000-304889	20000609
JP 2001015077	A2	20010119	JP 2000-177789	20000614
CN 1277456	A	20001220	CN 2000-109268	20000615
US 6514113	B1	20030204	US 2000-594150	20000615

PRAI KR 1999-22415 A 19990615

KR 1999-23047 A 19990618

KR 2000-30355 A 20000602

AB **White** light sources are described which comprise a metal cathode film formed on a lower substrate; a catalytic metal film formed on the metal film: carbon nanotubes for emission of electrons in an applied elec. field vertically aligned on the catalytic metal film; spacers mounted on the catalytic metal film; and a transparent upper substrate to which a transparent anode is attached and to which in turn a fluorescent body is attached, the transparent upper substrate being mounted on the spacers so that the fluorescent body faces the carbon nanotubes. Methods of fabricating the light sources are described which entail forming a metal film used as a cathode on a lower substrate; forming a catalytic metal film on the metal film; growing carbon nanotubes for emission of electrons in an applied elec. field to be vertically aligned on the catalytic metal film; mounting spacers on the catalytic metal film; mounting a transparent upper substrate having a transparent electrode having a fluorescent body on the spacers so that the fluorescent body faces the carbon nanotubes; and sealing the transparent upper substrate with the lower substrate. The metal film may be formed of Cr, Ti, TiN, W, or Al. The catalytic metal film may be formed of Co, Ni, Fe, Y, or an alloy of .gtoreq.2 of these.

IT **Electric lamps**

(cathodoluminescent; **white** light sources using carbon

nanotube-contg. cathode structures and their fabrication)

IT 12394-20-6, Calcium chloride fluoride phosphate (Ca10ClF(PO4)6)

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(**antimony-** and **manganese-**activated; **white**

light sources using carbon nanotube-contg. cathode structures and their fabrication)

IT 7439-96-5, **Manganese**, uses 7440-36-0,

Antimony, uses

RL: DEV (Device component use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses) (calcium chloride fluoride phosphate activated with; **white**

light sources using carbon nanotube-contg. cathode structures and their fabrication)

IT 12394-20-6, Calcium chloride fluoride phosphate (Ca10ClF(PO4)6)

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(**antimony-** and **manganese-**activated; **white**

light sources using carbon nanotube-contg. cathode structures and their fabrication)

RN 12394-20-6 HCAPLUS

CN Calcium chloride fluoride phosphate (Ca10ClF(PO4)6) (7CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Cl	1	22537-15-1
F	1	14762-94-8
O4P	6	14265-44-2

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Ca | 10 | 7440-70-2

IT 7439-96-5, Manganese, uses 7440-36-0,
Antimony, usesRL: DEV (Device component use); MOA (Modifier or additive use); PEP
(Physical, engineering or chemical process); PROC (Process); USES (Uses)
(calcium chloride fluoride phosphate activated with; white
light sources using carbon nanotube-contg. cathode structures and their
fabrication)

RN 7439-96-5 HCAPLUS

CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mn

RN 7440-36-0 HCAPLUS

CN Antimony (8CI, 9CI) (CA INDEX NAME)

Sb

L48 ANSWER 13 OF 52 HCAPLUS COPYRIGHT ACS on STN

AN 2000:489521 HCAPLUS

DN 133:81438

TI The manufacturing method of milk-white acrylic lighting
cover which is mixed with fluorescent substance

IN Kim, Eun-Yong

PA S. Korea

PATENT NO. KIND DATE APPLICATION NO. DATE

PI KR 9700531 B1 19970113 KR 1992-8740 19920522

PRAI KR 1992-8740 19920522

AB The method of manufg. the cover of illuminating lamp
is comprised of: (1) mixing a fluorescent material of 1% (Ca₁₀(PO₄)₆FCI :
Sb, Mn, or Ca₁₀(FCI)(PO₄)₆:Sb, Mn)
into an acrylic resin of 10% contg. an existing synthetic resin having a
high light-projective characteristic; (2) uniformly stirring the particles
of the fluorescent material mixed into the acrylic resin; and (3)
processing a protective window which is light-projected and a
light-projective cover for use in a lamp in a conventional
compression molding or injection molding manner.

IT Electric lamps

(cover; manufg. method of milk-white acrylic lighting
cover which is mixed with fluorescent substance)IT 12394-20-6, Calcium chloride fluoride phosphate (Ca₁₀ClF(PO₄)₆)

RL: DEV (Device component use); USES (Uses)

(manufg. method of milk-white acrylic lighting

cover which is mixed with fluorescent substance)

RN 12394-20-6 HCAPLUS

CN Calcium chloride fluoride phosphate (Ca₁₀ClF(PO₄)₆) (7CI, 9CI) (CA INDEX
NAME)

Component	Ratio	Component Registry Number
Cl	1	22537-15-1
F	1	14762-94-8
O4P	6	14265-44-2
Ca	10	7440-70-2

10/080,226 10/7/2003

IT 7439-96-5, Manganese, uses 7440-36-0,
Antimony, uses
RL: MOA (Modifier or additive use); USES (Uses)
(manufg. method of milk-white acrylic lighting
cover which is mixed with fluorescent substance)
RN 7439-96-5 HCAPLUS
CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mn

RN 7440-36-0 HCAPLUS
CN Antimony (8CI, 9CI) (CA INDEX NAME)

Sb

L48 ANSWER 15 OF 52 HCAPLUS COPYRIGHT ACS on STN
AN 1998:513629 HCAPLUS
DN 129:251988
TI Preparation of an antimony- and manganese-activated
apatite phosphor from amorphous calcium phosphate
AU Toyama, Takeshi; Motoki, Satoshi; Yasue, Tamotsu; Arai, Yasuo
CS Dep. Ind. Chem., Fac. Sci. Eng., Nihon Univ., Kanda-Surugadai, Chiyoda-ku,
Tokyo, 101-8308, Japan
SO Muki Materiaru (1998), 5(275), 314-320
CODEN: MUMAFX; ISSN: 1340-7899
PB Sekko Sekkai Gakkai
DT Journal
LA Japanese
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related
Properties)
Section cross-reference(s): 78
AB The Sb (III) and Mn (II) activated apatite phosphor
for fluorescent lamp was produced by burning of mixt. such as Ca
H phosphate anhydride (CaHPO₄), Ca carbonate (CaCO₃), Ca fluoride (CaF₂),
Ca chloride (CaCl₂), Sb trioxide (Sb₂O₃) and Mn
carbonate (MnCO₃) under high temp. at 1200.degree. and it was hoped to
energy-saving by decreasing burning temp. The present work was studied
about prepn. of Sb and Mn activated apatite phosphor
under low temp. from fine amorphous Ca phosphate (Ca₃(PO₄)₂.nH₂O, ACP)
with high activity as raw material. The phosphor was characterized by
x-ray diffractometry, thermal anal. (TG-DTA), fluorescent
spectrophotometer, scanning electron microscopic observation and chem.
anal. The relative emission intensity of Sb and Mn
activated apatite phosphor was affected remarkably by preparative
conditions such as burning temp., time, F/(F+Cl), Sb/Ca and
Mn/Ca at. ratios. The most suitable compounding ratios were 0.04
of Sb/Ca at. ratio and 0.02 of Mn/Ca at. ratio. Also,
the emission spectrum of phosphor obtained by ACP was showed similar to
marketing apatite phosphor with the blue luminescence of 460 nm
and yellow luminescence of 575 nm. The shape of phosphor was spherical
particle with a diam. of 1 .mu.m which was superior to high spreadability.
IT Fluorescence
Fluorescent lamps
IT 1306-04-3P, Chlorapatite (Ca₅Cl(PO₄)₃) 1306-05-4P, Fluorapatite
(Ca₅F(PO₄)₃) 75535-31-8P, Calcium chloride fluoride phosphate
(Ca₅(Cl,F)(PO₄)₃)
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP
(Preparation); USES (Uses)

(prepn. of **antimony-** and **manganese-**activated
apatite phosphor from amorphous calcium phosphate)
IT 7439-96-5, **Manganese**, uses 7440-36-0,
Antimony, uses
RL: MOA (Modifier or additive use); USES (Uses)
(prepn. of **antimony-** and **manganese-**activated
apatite phosphor from amorphous calcium phosphate)
apatite phosphor from amorphous calcium phosphate)
IT 1306-05-4P, Fluorapatite (Ca₅F(PO₄)₃) 75535-31-8P,
Calcium chloride fluoride phosphate (Ca₅(Cl,F)(PO₄)₃)
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP
(Preparation); USES (Uses)
(prepn. of **antimony-** and **manganese-**activated
apatite phosphor from amorphous calcium phosphate)
RN 1306-05-4 HCAPLUS
CN Fluorapatite (Ca₅F(PO₄)₃) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
F	1	14762-94-8
O4P	3	14265-44-2
Ca	5	7440-70-2

RN 75535-31-8 HCAPLUS
CN Calcium chloride fluoride phosphate (Ca₅(Cl,F)(PO₄)₃) (9CI) (CA INDEX
NAME)

Component	Ratio	Component Registry Number
Cl	0 - 1	22537-15-1
F	0 - 1	14762-94-8
O4P	3	14265-44-2
Ca	5	7440-70-2

IT 7439-96-5, **Manganese**, uses 7440-36-0,
Antimony, uses
RL: MOA (Modifier or additive use); USES (Uses)
(prepn. of **antimony-** and **manganese-**activated
apatite phosphor from amorphous calcium phosphate)
RN 7439-96-5 HCAPLUS
CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mr:


RN 7440-36-0 HCAPLUS
CN Antimony (8CI, 9CI) (CA INDEX NAME)

SD

L48 ANSWER 17 OF 52 HCAPLUS COPYRIGHT ACS on STN
AN 1996:44860 HCAPLUS
DN 124:218798
TI Electron spectroscopy for chemical analysis of Cool White phosphors coated
with SiO₂ thin film

7P250.154J

10/080,226 10/7/2003

AU Dang, Tuan A.; Chau, Chung N.
 CS Res. Dev., Osram Sylvania Incorporated, Towanda, PA, 18848, USA
 SO Journal of the Electrochemical Society (1996), 143(1), 302-5 
 CODEN: JESOAN; ISSN: 0013-4651
 PB Electrochemical Society
 AB Silica formed on the surface of Cool White phosphor by pptn. of either tetraethylorthosilicate or Ludox AM (aq. colloidal silica) is not homogeneously distributed. Electron spectroscopy for chem. anal. indicates that oxygen sites of the phosphor surface are preferentially coated. The preference for oxygen sites is likely the result of hydrogen bonding formation available at these sites. There was no preference for the remaining sites (Ca, F, and P) which are probably adsorbed by physisorption.
 ST electron spectroscopy silica coated Cool White; phosphor Cool White silica coating analysis
 IT 158346-27-1
 RL: AMX (Analytical matrix); ANT (Analyte); ANST (Analytical study)
 (electron spectroscopy for chem. anal. of Cool White phosphors coated with SiO2 thin film)
 RN 158346-27-1 HCAPLUS
 CN Antimony calcium manganese chloride fluoride oxide phosphate
 (Sb0.06-0.2Ca9.3-9.79Mn0.15-0.5Cl10-0.4F1.4-1.94O0.06-0.2(PO4)6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
Cl	0 - 0.4	22537-15-1
O	0.06 - 0.2	17778-80-2
F	1.4 - 1.94	14762-94-8
O4P	6	14265-44-2
Ca	9.3 - 9.79	7440-70-2
Sb	0.06 - 0.2	7440-36-0
Mn	0.15 - 0.5	7439-96-5

 L48 ANSWER 18 OF 52 HCAPLUS COPYRIGHT ACS on STN
 AN 1995:1000020 HCAPLUS
 DN 124:159893
 TI High wall-load fluorescent lamp
 IN Ichinomya, Takaharu; Inagawa, Keiji; Kobayashi, Satoko; Hashimoto, Yosho
 PA Nichia Kagaku Kogyo Kk, Japan
 PATENT NO. KIND DATE APPLICATION NO. DATE

 PI JP 07272684 A2 19951020 JP 1994-57517 19940328
 JP 3317374 B2 20020826
 PRAI JP 1994-57517 19940328
 AB The lamp having a wall load .gtoreq.500 W/m2 comprises a phosphor layer contg. an alk. earth metal halophosphate (M,Sb,Mn)10(PO4)6FC1.bul.R (M = Mg, Ca, Sr, and/or Ba; R = La, Y, and/or Gd; R content 10-5000 ppm). The lamp showed high luminous efficiency.
 IT 154656-21-0
 RL: DEV (Device component use); USES (Uses)
 (rare earth metal-activated; high-power fluorescent lamp contg. rare earth metal-activated alk. earth metal halophosphate phosphor with high luminous efficiency)
 RN 154656-21-0 HCAPLUS
 CN Antimony calcium manganese chloride fluoride phosphate
 (SbCa10Mn(Cl,F)2(PO4)6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
Cl	0 - 2	22537-15-1
F	0 - 2	14762-94-8
O4P	6	14265-44-2

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Ca	10	7440-70-2
Sb	1	7440-36-0
Mn	1	7439-96-5

 L48 ANSWER 19 OF 52 HCAPLUS COPYRIGHT ACS on STN

AN 1995:842790 HCAPLUS

DN 123:241389

TI Method for making a calcium halophosphate phosphor

IN Chau, Chung N.

PA Osram Sylvania Inc., USA

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	US 5447660	A	19950905	US 1993-162830	19931206
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PRAI	US 1993-162830	19931206
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AB Methods for making a phosphor described by the general formula, $\text{Ca}_5\text{-x-ySbxMny}(\text{PO}_4)_3\text{Cl}_2\text{F}_1\text{-x-z}$ ($x = 0.02\text{-}0.04$; $y = 0.1\text{-}0.2$; and $z = 0.07\text{-}0.11$) entail combining a source of dicalcium phosphate, a source of calcium carbonate, a source of calcium fluoride, a source of ammonium chloride, a source of manganese carbonate, and a source of antimony oxide to form a mixt., the source of dicalcium phosphate having a particle size selected to yield a phosphor having a specific particle size when the mixt. is fired, the specific particle size being detd. by the wt. percent of antimony so that the combination of the specific particle size and wt. percent of antimony yield a 100 percent relative quantum efficiency relative to a cool white phosphor having about 0.65 wt. percent antimony and a particle size of about 10.5 μm ; and firing the mixt. to form the calcium halophosphate phosphor activated with antimony and manganese having the specific particle size. These methods provide calcium halophosphate phosphors activated with antimony and manganese having higher quantum efficiencies at specific antimony concns. as a result of increasing the phosphor's UV reflectivity by decreasing the phosphor's particle size without substantially decreasing the phosphor's emission.

IT 168963-55-1P

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (methods for making calcium halophosphate phosphors)

RN 168963-55-1 HCAPLUS

CN Antimony calcium manganese chloride fluoride phosphate
 $(\text{Sb}_{0.02}\text{-}0.04\text{Ca}_{4.4}\text{-}4.7\text{Mn}_{0.1}\text{-}0.2\text{Cl}_{1.07}\text{-}0.11\text{F}_{0.85}\text{-}0.92(\text{PO}_4)_3)$ (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Cl	0.07 - 0.11	22537-15-1
F	0.85 - 0.92	14762-94-8
O4P	3	14265-44-2
Ca	4.4 - 4.7	7440-70-2
Sb	0.02 - 0.04	7440-36-0
Mn	0.1 - 0.2	7439-96-5

 L48 ANSWER 20 OF 52 HCAPLUS COPYRIGHT ACS on STN

AN 1995:239904 HCAPLUS

DN 122:67924

TI Fluorescent lamps with high color-rendering and high brightness

IN Pappalardo, Romano G.

PA Flowil International Lighting (HOLDING) B.V., Neth.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	EP 595527	A1	19940504	EP 1993-308312	19931019
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	EP 595527	B1	19980520		
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10/080,226 10/7/2003

US 5854533 A 19981229 US 1992-963873 19921019
 PRAI US 1992-963873 19921019
 AB Fluorescent lamps are described which employ phosphor blends comprising a plurality of metamerics blends. Preferably, the metamerics blends of lamp phosphors have substantially identical color coordinates. Cheaper phosphor blends may then be used in conjunction with more expensive fluorescent coatings of the same color coordinate to produce a cheaper fluorescent lamp of the same color coordinates.
 IT Calcium halide phosphates
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
 (antimony- and manganese-activated; fluorescent lamps with high color-rendering and high brightness using metamerics blends)
 IT 12015-73-5, Calcium fluoride phosphate (Ca₅F(PO₄)₃)
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
 (antimony- and manganese-activated; fluorescent lamps with high color-rendering and high brightness using metamerics blends)
 IT 12015-73-5, Calcium fluoride phosphate (Ca₅F(PO₄)₃)
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
 (antimony- and manganese-activated; fluorescent lamps with high color-rendering and high brightness using metamerics blends)
 RN 12015-73-5 HCAPLUS
 CN Calcium fluoride phosphate (Ca₅F(PO₄)₃) (6CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
F	1	14762-94-8
O4P	3	14265-44-2
Ca	5	7440-70-2

IT 7439-96-5, Manganese, uses 7440-36-0, Antimony, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (fluorescent lamps with high color-rendering and high brightness using metamerics blends)
 RN 7439-96-5 HCAPLUS
 CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mn

RN 7440-36-0 HCAPLUS
 CN Antimony (8CI, 9CI) (CA INDEX NAME)

St

 L48 ANSWER 21 OF 52 HCAPLUS COPYRIGHT ACS on STN
 AN 1995:93386 HCAPLUS
 DN 122:41362
 TI Electrokinetics of phosphors
 AU Dutta, Arunava
 CS Research and Development, Osram Sylvania Inc, Danvers, MA, 01923, USA

10/080,226 10/7/2003

SO NIST Special Publication (1993), 856(ELECTROACOUSTICS FOR CHARACTERIZATION OF PARTICULATES AND SUSPENSIONS), 274-300
CODEN: NSPUE2; ISSN: 1048-776X

AB Electrokinetic studies were conducted on a variety of fluorescent lamp phosphors using the electrokinetic sonic amplitude (ESA) technique. The ESA vs. pH and isoelec. points of phosphors emitting in the UV, red, green, blue, and white regions of the spectrum are studied. The effects of nonluminescent additives, multicomponent phosphor blends, surface coatings, wash treatments, and ionic polymers on the electrokinetic behavior of phosphors are studied.

ST electrokinetics fluorescent lamp phosphor

IT Polyelectrolytes
RL: PRP (Properties)
(electrokinetics of fluorescent lamp phosphors contg.)

IT Phosphors
(fluorescent lamp; electrokinetics of)

IT 75535-31-8, Calcium chloride fluoride phosphate (Ca5(Cl,F)(PO4)3)
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(electrokinetics of fluorescent lamp phosphors contg.)

RN 75535-31-8 HCAPLUS

CN Calcium chloride fluoride phosphate (Ca5(Cl,F)(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
=====	=====	=====
Cl	0 - 1	22537-15-1
F	0 - 1	14762-94-8
O4P	3	14265-44-2
Ca	5	7440-70-2

IT 7439-96-5, Manganese, uses 7440-36-0, Antimony, uses
RL: MOA (Modifier or additive use); USES (Uses)
(electrokinetics of fluorescent lamp phosphors doped with)

RN 7439-96-5 HCAPLUS

CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mr.

RN 7440-36-0 HCAPLUS

CN Antimony (8CI, 9CI) (CA INDEX NAME)

SB

L48 ANSWER 22 OF 52 HCAPLUS COPYRIGHT ACS on STN

AN 1994:641377 HCAPLUS

DN 121:241377

TI Process for making apatitic phosphors

IN McSweeney, Robert T.

PA Osram Sylvania Inc., USA

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI US 5336437	A	19940809	US 1993-69899	19930601
US 5232626	A	19930803	US 1992-902125	19920622
PRAI US 1992-902125		19920622		

AB Methods of prepg. an alk. earth halophosphor having an antimony content

10/080,226 10/7/2003

greater than about 0.70 wt. percent and having the general formula $\text{Ca}_{10-x-z}\text{Mn}_x\text{Sb}_z(\text{F}_{2-y}\text{Cl}_y\text{O}_z)(\text{PO}_4)_6$ (x is from 0.15 to 0.5; z is from greater than about 0.06 to about 0.2; and y is from 0 to 0.4) entail: forming a uniform mixt. of starting raw materials in sufficient amts. to produce an alk. earth halophosphate of a similar formulation and an air-fired alk. earth halophosphate of the formula, the air-fired halophosphate having been fired in air at a temp. of 1150.degree. to 1200.degree. and firing the uniform mixt. of starting materials and the air-fired alk. earth halophosphate in an inert atm. at a temp. from about 1100.degree. to about 1160.degree. so that the air-fired alk. earth halophosphate is refired in an atm. contg. volatile species comprising H_2O , CO_2 , Sb_2O_4 , SbCl_3 , H_2 and CO produced from the starting raw materials. The refiring method enhances the brightness and relative quantum efficiency of calcium halophosphates with high antimony content.

IT 158346-27-1P

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (refiring processes for making apatitic phosphors)

RN 158346-27-1 HCAPLUS

CN Antimony calcium manganese chloride fluoride oxide phosphate ($\text{Sb}_{0.06-0.2}\text{Ca}_{9.3-9.79}\text{Mn}_{0.15-0.5}\text{Cl}_{1.4-1.94}\text{O}_{0.06-0.2}(\text{PO}_4)_6$) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Cl	0 - 0.4	22537-15-1
O	0.06 - 0.2	17778-80-2
F	1.4 - 1.94	14762-94-8
O4P	6	14265-44-2
Ca	9.3 - 9.79	7440-70-2
Sb	0.06 - 0.2	7440-36-0
Mn	0.15 - 0.5	7439-96-5

L48 ANSWER 23 OF 52 HCAPLUS COPYRIGHT ACS on STN

AN 1994:641363 HCAPLUS

DN 121:241363

TI color-variable fluorescent lamps

IN Yuasa, Kunio

PA Toshiba Lighting & Technology, Japan

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 06076801	A2	19940318	JP 1992-230766	19920831
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PRAI	JP 1992-230766	19920831
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AB The title lamp, contg. Hg and rare gases, comprises a 1st and a 2nd phosphor layer emitting a 1st and a 2nd colored light via the excitations by the 185 and the 254 nm Hg line, resp.; and means for changing the intensity ratio between the 185 and the 254 nm line by changing the pulse-duty ratio or the bulb temp. The lamp typically changes the color continuously between greenish and reddish white.

IT Electric lamps

(fluorescent, continuously color variable, contg. dual phosphor layers)

IT 75535-31-8, Calcium chloride fluoride phosphate ($\text{Ca}_5(\text{Cl},\text{F})(\text{PO}_4)_3$)

RL: PRP (Properties)

(antimony manganese-codoped, color-variable fluorescent lamps contg.)

RN 75535-31-8 HCAPLUS

CN Calcium chloride fluoride phosphate ($\text{Ca}_5(\text{Cl},\text{F})(\text{PO}_4)_3$) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Cl	0 - 1	22537-15-1

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F	0 - 1	14762-94-8
O4P	3	14265-44-2
Ca	5	7440-70-2

IT 7439-96-5, Manganese, uses 7440-36-0,
Antimony, uses
RL: USES (Uses)
(dopants, electroluminescent phosphors contg., in color-variable
fluorescent lamps)
RN 7439-96-5 HCAPLUS
CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mn

RN 7440-36-0 HCAPLUS
CN Antimony (8CI, 9CI) (CA INDEX NAME)

Sb

L48 ANSWER 25 OF 52 HCAPLUS COPYRIGHT ACS on STN
AN 1994:256419 HCAPLUS
DN 120:256419
TI Tribochemical synthesis of halogen-phosphate luminophores
AU Gospodinov, G. G.; Marchev, V. M.; Stoeva, V.; Yordanov, G.
CS Dep. Inorg. Chem., Bourgas Univ. Technol., Bulg.
SO Crystal Research and Technology (1994), 29(1), 45-9
CODEN: CRTEDF; ISSN: 0232-1300
AB The possibility of tribochem. synthesis of $\text{Ca}_{10}(\text{PO}_4)_6 \cdot \text{ntdot} (\text{F}, \text{Cl})_2 \text{SbMn}$
is shown. It was proved that the synthesis with the initial compds.
 $\text{CaHPO}_4 \cdot \text{ntdot} 2\text{H}_2\text{O}$ or $\beta\text{-Ca}_3(\text{PO}_4)_2$ is realized 1-2 h faster than the
synthesis when CaHPO_4 is used.
IT 154656-21-0P
RL: PREP (Preparation)
(luminophores, tribochem. synthesis of)
RN 154656-21-0 HCAPLUS
CN Antimony calcium manganese chloride fluoride phosphate
($\text{SbCa}_{10}\text{Mn}(\text{Cl}, \text{F})_2(\text{PO}_4)_6$) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Cl	0 - 2	22537-15-1
F	0 - 2	14762-94-8
O4P	6	14265-44-2
Ca	10	7440-70-2
Sb	1	7440-36-0
Mn	1	7439-96-5

L48 ANSWER 26 OF 52 HCAPLUS COPYRIGHT ACS on STN
AN 1994:90363 HCAPLUS
DN 120:90363
TI Process for making apatitic phosphors
IN McSweeney, Robert T.

10/080,226 10/7/2003

PA GTE Products Corp., USA

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	US 5232626	A	19930803	US 1992-902125	19920622
	US 5336437	A	19940809	US 1993-69899	19930601
	CA 2098627	AA	19931223	CA 1993-2098627	19930617
	EP 575938	A1	19931229	EP 1993-109881	19930621
	EP 575938	B1	19960327		

PRAI US 1992-902125 19920622

AB Methods of prepg. phosphors described by the general formula $\text{Ca}_{10-x}\text{Mn}_x\text{Sb}_z(\text{F}_2-y-\text{zCl}_y\text{O}_z)(\text{PO}_4)_6$ (Sb content >70 wt.%; $x = 0.15-0.5$; $y = 0-0.4$; and $z = 0.06-0.2$) entail placing a 1st vessel contg. a starting material mixt. for the phosphor and a 2nd vessel contg. an already fired phosphor in a furnace in which an inert gas (e.g., N_2) flows over the 1st vessel and then over the 2nd vessel and firing at .apprx.1025-1100.degree. so that the already fired phosphor is refired in an atm. contg. H_2O , CO_2 , Sb_2O_4 , SbCl_3 , H_2 and CO produced from the raw material mixt.

IT 158346-27-1P

RL: PREP (Preparation)
(prepn. of phosphors based on)

RN 158346-27-1 HCAPLUS

CN Antimony calcium manganese chloride fluoride oxide phosphate
($\text{Sb}_{0.06-0.2}\text{Ca}_{9.3-9.7}\text{Mn}_{0.15-0.5}\text{Cl}_{1.4-1.9}\text{F}_{1.4-1.9}\text{O}_{0.06-0.2}(\text{PO}_4)_6$) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Cl	0 - 0.4	22537-15-1
O	0.06 - 0.2	17778-80-2
F	1.4 - 1.94	14762-94-8
O4P	6	14265-44-2
Ca	9.3 - 9.79	7440-70-2
Sb	0.06 - 0.2	7440-36-0
Mn	0.15 - 0.5	7439-96-5

L48 ANSWER 28 OF 52 HCAPLUS COPYRIGHT ACS on STN

AN 1993:135680 HCAPLUS

DN 118:135680

TI Antimony- and manganese-activated calcium barium fluoroapatite phosphors
and a method for controlling emission color

IN Chau, Chung Nin; Chenot, Charles F.; Fischer, Timothy S.

PA GTE Products Corp., USA

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	DE 4202469	A1	19921029	DE 1992-4202469	19920129
	NL 9102141	A	19921116	NL 1991-2141	19911220
	JP 05140551	A2	19930608	JP 1992-126623	19920421

PRAI US 1991-688240 19910422

AB The title phosphors are described by the general formula $\text{Ca}_{4.731-a}\text{Ba}_{a}\text{Mn}_b\text{Sb}_c(\text{PO}_4)_3\text{F}_{1-c}\text{O}_c$ ($0 \leq a \leq 0.3$ or $3.2 \leq a \leq 4.731$; $b = \text{apprx.}0.0952$; and $c = \text{apprx.}0.03$). The title method, which maximizes the value of the x chromatic coordinate while minimizing that of the y chromatic coordinate in a CIE diagram, entails prepg. a phosphor described by the general formula $\text{Ca}_{4.731-a}\text{Ba}_{a}\text{Mn}_{0.0952}\text{Sb}_{0.03}(\text{PO}_4)_3\text{F}_{0.932}\text{O}_{0.03}$ and replacing Ca with Ba so that $a = 0-1.899$.

IT 146391-37-9 146391-38-0 146391-39-1
146391-40-4 146391-41-5 146391-42-6
146391-43-7

RL: PRP (Properties)
(phosphor)

RN 146391-37-9 HCAPLUS

CN Antimony calcium manganese fluoride oxide phosphate

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(Sb0.03Ca4.73Mn0.1F0.93O0.03(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.03	17778-80-2
F	0.93	14762-94-8
O4P	3	14265-44-2
Ca	4.73	7440-70-2
Sb	0.03	7440-36-0
Mn	0.1	7439-96-5

L48 ANSWER 29 OF 52 HCAPLUS COPYRIGHT ACS on STN

AN 1992:601560 HCAPLUS

DN 117:201560

TI Fluorescent lamp device

IN Kishi, Takashi; Matsuda, Shingo; Nomi, Kazumasa

PA Matsushita Denshi Kogyo K. K., Japan

PATENT NO. KIND DATE APPLICATION NO. DATE

PI JP 04093390 A2 19920326 JP 1990-212361 19900809

PRAI JP 1990-212361 19900809

AB The title device with a short afterglow time has a combination of fluorescent lamps of red, natural white, and blue light and comprising Sn-activated (Sr,Mg)3(PO4)2 (I), an Sb-Mn-activated Ca10(PO4)3(F,Cl)-I mixt., and Eu-activated BaMg2Al16O27, resp.

IT Electric lamps (fluorescent, optical devices comprising, of different colors)

IT 75535-31-8, Calcium chloride fluoride phosphate (Ca5(Cl,F)(PO4)3) RL: USES (Uses) (antimony-manganese-activated, for fluorescent lamps)

RN 75535-31-8 HCAPLUS

CN Calcium chloride fluoride phosphate (Ca5(Cl,F)(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Cl	0 - 1	22537-15-1
F	0 - 1	14762-94-8
O4P	3	14265-44-2
Ca	5	7440-70-2

L48 ANSWER 33 OF 52 HCAPLUS COPYRIGHT ACS on STN

AN 1991:644445 HCAPLUS DN 115:244445

TI Determination of the antimony substitution site in calcium fluorapatite from powder x-ray diffraction data

AU DeBoer, Barry G.; Sakthivel, A.; Cagle, J. R.; Young, R. A.

SO Acta Crystallographica, Section B: Structural Science (1991), B47(5), 683-92
CODEN: ASBSDK; ISSN: 0108-7681

AB Comparison of powder x-ray diffraction data from a 2.2 wt% Sb-substituted Ca fluorapatite [0.185 Sb atoms per unit cell contg. Ca10F2(PO4)6] with data from an undoped sample shows electron d. changes corresponding to Sb substitution at the Ca(2) (mirror) site. Many properties of this 2.2 wt% Sb sample indicate that it corresponds to com. halophosphate phosphors of lower Sb concn. Differing properties are shown by a 3.1 wt% Sb sample for which no diffraction evidence is found for substitution at the Ca(2) site, but for which electron d. difference maps do suggest substitution at the Wyckoff 2(c) and 2(d) sites of P63/m, between Ca(1) (3-fold) positions. Both Rietveld refinements and Fourier inversion of the differences between obsd. intensities were used to reach these conclusions.

IT 137113-78-1, Antimony calcium fluoride phosphate

10/080,226 10/7/2003

(Sb_{0.19}Ca₁₀F_{1.94}(PO₄)_{6.17}) 137113-79-2, Antimony calcium
fluoride phosphate (Sb_{0.27}Ca₁₀F_{2.06}(PO₄)_{6.22})
RL: PRP (Properties) (lattice location of antimony in)

RN 137113-78-1 HCAPLUS

CN Antimony calcium fluoride phosphate (Sb_{0.19}Ca₁₀F_{1.94}(PO₄)_{6.17})

Component	Ratio	Component Registry Number
F	1.94	14762-94-8
O4P	6.17	14265-44-2
Ca	10	7440-70-2
Sb	0.19	7440-36-0

RN 137113-79-2 HCAPLUS

CN Antimony calcium fluoride phosphate (Sb_{0.27}Ca₁₀F_{2.06}(PO₄)_{6.22}) (9CI) (CA
INDEX NAME)

Component	Ratio	Component Registry Number
F	2.06	14762-94-8
O4P	6.22	14265-44-2
Ca	10	7440-70-2
Sb	0.27	7440-36-0

L48 ANSWER 35 OF 52 HCAPLUS COPYRIGHT ACS on STN

AN 1990:641110 HCAPLUS

DN 113:241110

TI Fluorescent lamps

IN Hagiwara, Yasuhiko; Kato, Seiji

PA Toshiba Corp., Japan

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02120389	A2	19900508	JP 1988-270732	19881028
JP 1988-270732		19881028		

PI JP 02120389 A2 19900508 JP 1988-270732 19881028

PRAI JP 1988-270732 19881028

AB A narrow-band fluorescent lamp employs a phosphor film
consisting of: a combination of a blue Sr₂P₂O₇:Eu²⁺ phosphor
having an emission peak at 410-430 nm, a blue phosphor having an
emission peak at 440-460 nm, and a blue Ca₁₀(PO₄)₆(F,Cl)₂:
Sb phosphor having a peak at 480 nm; a green phosphor
having a peak at 530-550 nm; and a red phosphor having a peak at 600-620
nm.

IT 7440-36-0, Antimony, uses and miscellaneous

RL: USES (Uses)

(phosphors activated with, for narrow-band fluorescent lamps)

RN 7440-36-0 HCAPLUS

CN Antimony (8CI, 9CI) (CA INDEX NAME)

Sb

IT 75535-31-8, Calcium chloride fluoride phosphate (Ca₅(Cl,F)(PO₄)₃)

RL: PRP (Properties)

(phosphors based on antimony-activated, for narrow-band fluorescent lamps)

RN 75535-31-8 HCAPLUS

CN Calcium chloride fluoride phosphate (Ca₅(Cl,F)(PO₄)₃) (9CI) (CA INDEX
NAME)

Component	Ratio	Component Registry Number

10/080,226 10/7/2003

Cl	0 - 1	22537-15-1
F	0 - 1	14762-94-8
O4P	3	14265-44-2
Ca	5	7440-70-2

L48 ANSWER 39 OF 52 HCAPLUS COPYRIGHT ACS on STN AN 1987:467743 DN 107:67743

TI Fluorescent lamp based on calcium halophosphate phosphor

IN Watarai, Yoshiaki

PA Matsushita Electric Works, Ltd., Japan

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 62012627	B4	19870319	JP 1977-28856	19770315
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PRAI	JP 1977-28856	19770315
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AB A high-efficiency/color-rendering-index fluorescent lamp is provided with phosphors comprising 55-68 wt.% of a principal component, i.e., (Sb, Mn)-activated Ca halophosphate, a blue-green-emitting component having an emission peak at 470-530 nm, and a red-emitting component having an emission peak at 610-650 nm; the ratio of the blue-green to the red component is so selected as to match the color temp. of the blue-green/red components to that of the principal component under UV excitation; the blue-green component is selected from (Ba, Mg) aluminate, (Ba, Sr) silicate, and Mg gallate phosphors, and the red component from Eu-activated Y2O3, Eu-activated Y vanadate, and Eu-activated Y (vanadate, phosphate) phosphors.

IT 75535-31-8

RL: PRP (Properties)
(phosphor, for fluorescent lamps)

RN 75535-31-8 HCAPLUS

CN Calcium chloride fluoride phosphate (Ca5(Cl,F)(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Cl	0 - 1	22537-15-1
F	0 - 1	14762-94-8
O4P	3	14265-44-2
Ca	5	7440-70-2

IT 7439-96-5, Manganese, uses and miscellaneous

7440-36-0, Antimony, uses and miscellaneous

RL: USES (Uses)

(phosphors from calcium halophosphates activated by, for fluorescent lamps)

RN 7439-96-5 HCAPLUS

CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mn

RN 7440-36-0 HCAPLUS

CN Antimony (8CI, 9CI) (CA INDEX NAME)

Sb

L48 ANSWER 40 OF 52 HCAPLUS COPYRIGHT ACS on STN
 AN 1987:448645 HCAPLUS DN 107:48645
 TI Relation between luminescent properties and composition of warm
 white calcium halophosphate phosphors
 AU Huang, Zhupo; Sun, Xiaoping
 SO Beijing Daxue Xuebao, Ziran Kexueban (1986), (6), 1-7
 CODEN: PCTHAP; ISSN: 0479-8023
 DT Journal
 LA Chinese
 AB Calcium halophosphate phosphors are the most important luminescent
 materials, widely used in manufg. fluorescent lamps. In order
 to obtain warm white calcium halophosphate phosphors of
 specified luminescent properties, the correlation was studied of their
 properties (brightness, color coordinate, and color temp. etc) with their
 chem. compn. Some empirical factors and rules-were found, by which an
 optimum phosphor compn. can be obtained.
 IT 16397-91-4, Manganese(2+), properties 23713-48-6,
 Antimony(3+), properties
 RL: PRP (Properties)
 (luminescent properties of calcium halophosphates doped with, compn. in
 relation to)
 IT 75535-31-8
 RL: PRP (Properties)
 (luminescent properties of, compn. in relation to)
 RN 75535-31-8 HCAPLUS
 CN Calcium chloride fluoride phosphate (Ca5(Cl,F)(PO4)3) (9CI) (CA INDEX
 NAME)

Component	Ratio	Component Registry Number
=====+=====+=====		
Cl	0 - 1	22537-15-1
F	0 - 1	14762-94-8
O4P	3	14265-44-2
Ca	5	7440-70-2

L48 ANSWER 41 OF 52 HCAPLUS COPYRIGHT ACS on STN
 AN 1986:159278 HCAPLUS
 DN 104:159278
 TI Calcium halophosphate phosphor
 IN Gillooly, George Rice
 PA General Electric Co., USA
 PATENT NO. KIND DATE APPLICATION NO. DATE

 PI EP 173994 A2 19860312 EP 1985-111054 19850902
 EP 173994 A3 19870701
 JP 61118489 A2 19860605 JP 1985-195016 19850905
 PRAI US 1984-648207 19840907

AB Improved Ca halophosphate phosphors are described for increased luminous
 efficacy and maintenance when employed in fluorescent lamps.
 The improved phosphors are incorporated with a small but effective amt. of
 Mg ion during the synthesis to provide an essentially stoichiometric or
 single phase compn. Thus, a warm white phosphor of the compn.
 Ca9.45Mg0.02Cd0.1Mn0.36Sb0.07(PO4)6F1.76Cl0.17O0.07 was prepd. by blending
 a mixt. contg. CaHPO4 6, CaCO3 2.57, CaF2 0.88, MnCO3 0.36, CdO 0.1, NH4Cl
 0.3, Sb2O3 0.05, and MgCO3 0.02 mol and firing at 1160.degree. for
 apprx.2 h. The phosphor was then crushed, blended, and refired at
 1050.degree. in N atm. for 2 h. A fluorescent lamp with a
 coating of the above material produced warm white color point
 having trichromatic coordinates X = 0.46 and Y = 0.403.
 IT 7439-96-5, uses and miscellaneous 7440-36-0, uses and
 miscellaneous
 RL: USES (Uses)
 (calcium chlorofluorophosphate doped with, phosphor for fluorescent

10/080,226 10/7/2003

lamp from)
RN 7439-96-5 HCAPLUS
CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mr.

RN 7440-36-0 HCAPLUS
CN Antimony (8CI, 9CI) (CA INDEX NAME)

Sb

IT 12015-73-5D, solid soln. with calcium halophosphate
RL: PRP (Properties)
(doped with magnesium and cadmium and **manganese** and
antimony and **oxygen**, phosphor for fluorescent lamp
from)
RN 12015-73-5 HCAPLUS
CN Calcium fluoride phosphate (Ca5F(PO4)3) (6CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
F	1	14762-94-8
O4P	3	14265-44-2
Ca	5	7440-70-2

L48 ANSWER 42 OF 52 HCAPLUS COPYRIGHT ACS on STN

AN 1985:550692 HCAPLUS

DN 103:150692

TI Low-pressure **mercury-vapor discharge lamp**

PA N. V. Philips' Gloulampenfabrieken, Japan

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 59205145	A2	19841120	JP 1984-80339	19840423
	JP 06025355	B4	19940406		
	AU 8427174	A1	19841101	AU 1984-27174	19840419
	AU 563756	B2	19870723		
	FI 72837	B	19870331	FI 1984-1572	19840419
	FI 72837	C	19870710		
	ES 531828	A1	19850616	ES 1984-531828	19840423
	US 4800319	A	19890124	US 1985-814284	19851223
PRAI	NL 1983-1445		19830425		
	US 1984-598957		19840411		

AB A low-pressure Hg-vapor discharge lamp having a very satisfactory color-rendering property, color temp. of radiation **white** light 2300-3300 K, chromaticity point on or near a Planck's curve is described, which consists of a hermetically sealed transparent container contg. Hg and a rare gas(es) and light-emitting layer contg. a light-emitting halophosphate and light-emitting material activated with Eu(II). The lamp is provided with a means of absorbing a **blue** radiation shorter than 480 nm, and the light-emitting layer contains the following: (1) .gtoreq.1 **Sb**(II) or **Mn**(II) activated alkali metal halophosphate(s) having a color temp. 2900-5000 K; (2) .gtoreq.1 Eu(II)-activated light-emitting material(s) having a max. emission 470-500 nm and half-width .ltoreq.90 nm; and (3) .gtoreq.1 monoclinic Ce(II) or **Mn**(II) activated rare earth metaborate M(Mg,Zn,Cd)B5O10, where M = Y, La, and/or Ga and B may be substituted with Al and/or Ga .ltoreq.20 mol%. Addnl., the light-emitting layer may

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contain a **green**-emitting Tb(II) activated material. Thus, discharge **lamp** consisted of a garnet **blue**-absorbing layer and light-emitting layer contg. Ba_{0.95}Eu_{0.05}Al_{8.10}O_{13.15}, Ca_{9.33}Cd_{0.12}(PO₄)₆F_{1.7}Cl_{0.4}:Sb_{0.125}Mn_{0.35}, and Ce_{0.2}Gd_{0.6}Tb_{0.6}Mg_{0.94}Mn_{0.06}B₅O₁₀.

IT **Electric lamps**
(mercury)
IT 7439-96-5, uses and miscellaneous
RL: USES (Uses)
(phosphor compn. contg. for mercury discharge **lamp**)
RN 7439-96-5 HCAPLUS
CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mn

RN 12015-72-4 HCAPLUS
CN Calcium chloride phosphate (Ca₅Cl(PO₄)₃) (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Cl	1	22537-15-1
O4P	3	14265-44-2
Ca	5	7440-70-2

IT 12015-73-5D, solid solns. with metal halide phosphates
RL: TEM (Technical or engineered material use); USES (Uses)
(phosphors contg., for mercury discharge **lamp**)
RN 12015-73-5 HCAPLUS
CN Calcium fluoride phosphate (Ca₅F(PO₄)₃) (6CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
F	1	14762-94-8
O4P	3	14265-44-2
Ca	5	7440-70-2

L48 ANSWER 43 OF 52 HCAPLUS COPYRIGHT ACS on STN
AN 1982:209324 HCAPLUS
DN 96:209324
TI Fluorescent **lamp** construction utilizing a mixture of two phosphor materials
IN Piper, William Weldman; Gillooly, George Rice
PA General Electric Co., USA
PATENT NO. KIND DATE APPLICATION NO. DATE

PI GB 2081497 A 19820217 GB 1981-17348 19810605
JP 57034179 A2 19820224 JP 1981-96061 19810623
JP 59052197 B4 19841218
DE 3127679 A1 19820916 DE 1981-3127679 19810714
DE 3127679 C2 19861204
FR 2510817 A1 19830204 FR 1981-14922 19810731
FR 2510817 B1 19840622
PRAI US 1980-174250 19800731

AB To obtain emission which approximates daylight from a fluorescent **lamp**, a mixt. of 2 phosphors is used: a 1st having a relatively narrow emission spectrum in the **blue** region, and a 2nd having a relatively broad bimodal emission of **blue-green** color. The 2nd phosphor has the general formula Ca_{10-w-x-y}Cd_wMn_xSb_y(PO₄)₆F_{2-y-z}Cl_zO_y, where w = 0.0-0.2; x = 0.03-0.25; z = 0.0-0.09, and y = 0.02-0.2.

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The 1st phosphor can be $\text{Sr}_{10-z}\text{Eu}_z(\text{PO}_4)_6\text{Cl}_2$, where $z = 0.02-0.2$, or $\text{Ba}_{2-z}\text{Eu}_z\text{Eu}_z(\text{PO}_4)_6\text{Cl}_2$, where $z = 0.02-0.2$, or $\text{Ba}_{2-z}\text{Eu}_z\text{Mg}_2\text{Al}_{22}\text{O}_{37}$, where $z = 0.01-0.4$. The mixt. contains 3-12 parts by wt. of the 1st phosphor and 88-97 parts by wt. of the 2nd.

IT 7439-96-5, uses and miscellaneous 7440-36-0, uses and miscellaneous
 RL: USES (Uses)
 (phosphors activated with, for fluorescent lamps)
 RN 7439-96-5 HCAPLUS
 CN Manganese (8CI, 9CI) (CA INDEX NAME)

Ms:

RN 7440-36-0 HCAPLUS
 CN Antimony (8CI, 9CI) (CA INDEX NAME)

SL

IT 12015-73-5D, solid solns. with calcium chloride phosphate and calcium oxide phosphate
 RL: USES (Uses)
 (phosphors, for fluorescent lamps)
 RN 12015-73-5 HCAPLUS
 CN Calcium fluoride phosphate ($\text{Ca}_5\text{F}(\text{PO}_4)_3$) (6CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
F	1	14762-94-8
O4P	3	14265-44-2
Ca	5	7440-70-2

 L48 ANSWER 44 OF 52 HCAPLUS COPYRIGHT ACS on STN
 AN 1981:471979 HCAPLUS
 DN 95:71979
 TI Standard white fluorescent lamps employing phosphor blend
 IN Chenot, Charles F.; Walter, Wolfgang
 PA GTE Products Corp., USA
 PATENT NO. KIND DATE APPLICATION NO. DATE

 PI GB 2054258 A 19810211 GB 1980-20155 19800620
 GB 2054258 B2 19830622
 PRAI US 1979-51303 19790622

AB The sealed envelope of the title lamp contains an inert gas and Hg and has an inside coating comprising a blend of blue- and yellow-emitting phosphors, the blue-emitting phosphor being 10-35% of the blend. The lamp has a higher lm/W rating than previous std. white lamps while having the same chromaticity. The blue-emitting phosphor is $\text{Sr}_{5-x-y}\text{Eu}_x\text{Mn}_y(\text{PO}_4)_3\text{Cl}$ ($x = 0.005-0.15$; $y = 0-0.25$). The yellow-emitting phosphor is $\text{Ca}_{5-w-x-y}\text{Cd}_w\text{Mn}_x\text{Sb}_y(\text{PO}_4)_3\text{F}_{1-y}\text{aCl}_a\text{O}_y$ ($w = 0-0.005$; $x = 0.13-0.17$; $y = 0.02-0.04$; $a = 0.02-0.1$).

IT 12015-73-5
 RL: USES (Uses)
 (phosphor blend contg., doped with antimony, cadmium, chlorine and manganese, for std. white fluorescent lamp)
 RN 12015-73-5 HCAPLUS

10/080,226 10/7/2003

CN Calcium fluoride phosphate (Ca5F(PO4)3) (6CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
F	1	14762-94-8
O4P	3	14265-44-2
Ca	5	7440-70-2

IT 7439-96-5, uses and miscellaneous 7440-36-0, uses and
miscellaneous
RL: USES (Uses)
(phosphors contg.)
RN 7439-96-5 HCAPLUS
CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mn,

RN 7440-36-0 HCAPLUS
CN Antimony (8CI, 9CI) (CA INDEX NAME)

Sb

HCAPLUS COPYRIGHT ACS on STN

AN 1980:594698 HCAPLUS
DN 93:194698
TI Luminescence of halophosphate luminophors and impurity phases
AU Skreblyukov, A. E.; Grishenkov, O. P.; Orlova, N. I.
CS USSR
SO Zhurnal Prikladnoi Spektroskopii (1980), 33(1), 70-4
CODEN: ZPSBAX; ISSN: 0514-7506
DT Journal
LA Russian
CC 73-3 (Spectra by Absorption, Emission, Reflection, or Magnetic Resonance,
and Other Optical Properties)
AB The excitation and stationary luminescence spectra of halophosphate
luminophors and impurity phases of metaantimonate, ortho- and
pyrophosphate of Ca were investigated. Halophosphate luminophors when
excited with 312.6 nm wavelength radiation emit not only their **Sb**
and **Mn** bands of 480 and 584 nm, but also addnl. bands assocd.
with the impurity phases. From the luminescence intensity of these bands
one can evaluate the concn. of impurity phases, **stoichiometry**
and efficiency of luminophors.
IT 15878-50-9
RL: PRP (Properties)
(luminescence of **manganese**-contg.)
IT 42615-56-5
RL: PRP (Properties)
(luminescence of **antimony**-contg.)
RN 42615-56-5 HCAPLUS
CN Calcium chloride fluoride phosphate (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Cl	x	22537-15-1
F	x	14762-94-8
O4P	x	14265-44-2
Ca	x	7440-70-2

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IT 7439-96-5, properties 7440-36-0, properties
 RL: PRP (Properties)
 (luminescence of halophosphate phosphors contg.)
 RN 7439-96-5 HCAPLUS
 CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mr.

RN 7440-36-0 HCAPLUS
 CN Antimony (8CI, 9CI) (CA INDEX NAME)

Sb

 L48 ANSWER 47 OF 52 HCAPLUS COPYRIGHT ACS on STN
 AN 1978:162664 HCAPLUS
 DN 88:162664
 TI Cool-white fluorescent lamp with phosphor having
 modified spectral energy distribution to improve luminosity
 IN Piper, William W.; Prener, Jerome S.; Gillooly, George R.
 PA General Electric Co., USA
 PATENT NO. KIND DATE APPLICATION NO. DATE

 PI US 4075532 A 19780221 US 1976-695934 19760614
 GB 1572214 A 19800730 GB 1977-18324 19770502
 JP 52154284 A2 19771221 JP 1977-65883 19770606
 JP 61032780 B4 19860729
 NL 7706390 A 19771216 NL 1977-6390 19770610
 NL 173109 B 19830701
 NL 173109 C 19831201
 FR 2355376 A1 19780113 FR 1977-17841 19770610
 FR 2355376 B1 19800509
 DE 2726523 A1 19771215 DE 1977-2726523 19770611
 CA 1156034 A1 19831101 CA 1977-281676 19770629
 NL 8301944 A 19830901 NL 1983-1944 19830601
 NL 183375 B 19880502
 NL 183375 C 19881003
 PRAI US 1976-695934 19760614
 NL 1977-6390 19770610

AB A fluorescent lamp emitting white light is provided
 with a coating comprising a 1st phosphor with a relatively broad emission
 spectrum with a mean wavelength in a yellow portion of the visible
 spectrum (Ca10-w-x-yCdW_{Mn}Sby(PO4)6F2-yOy, with w .apprx.0.25-0.50 and y
 .apprx.0.02-0.2) and a 2nd phosphor with a relatively narrow emission
 spectrum in a blue portion of the visible spectrum
 (Sr10-zEuz(PO4)6Cl2, where z .apprx.0.02-0.2). The amt. of 2nd phosphor
 is sufficient to match the emission spectrum of the 1st phosphor to a cool
 white color point having trichromatic coordinates of approx. X =
 0.377 and Y = 0.382. The content of Mn is varied to achieve the
 cool white color point. The 2nd phosphor is present in an amt.
 of 4-11 wt.% and the 1st is 89-96 wt.% of the coating. Alternatively, as
 the 2nd phosphor, Ba2-zEuzMg2Al22O38 with z = 0.10-0.4 and a peak emission
 of .apprx.450 nm may be used.

IT Electric lamps

(fluorescent, cool white)

IT 7439-96-5, uses and miscellaneous

RL: USES (Uses)

(phosphors from calcium fluoroapatite contg., for cool white
 fluorescent lamps)

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RN 7439-96-5 HCAPLUS
CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mr.

IT 12015-73-5
RL: USES (Uses)
(phosphors from, in coatings for cool white fluorescent lamps)

RN 12015-73-5 HCAPLUS
CN Calcium fluoride phosphate (Ca₅F(PO₄)₃) (6CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
F	1	14762-94-8
O4P	3	14265-44-2
Ca	5	7440-70-2

HCAPLUS COPYRIGHT ACS on STN

AN 1974:527228 HCAPLUS
DN 81:127228
TI Effect of cadmium additions on the kinetics of halophosphate synthesis
AU Knuetter, R.
CS Fed. Rep. Ger.
SO **Technisch-Wissenschaftliche Abhandlungen der Osram-Gesellschaft (1973), 11, 269-76**
CODEN: TAOGAR; ISSN: 0371-5264
DT Journal
LA German
CC 67-3 (Catalysis and Reaction Kinetics)
Section cross-reference(s): 49, 78
AB The reaction kinetics of Ca halophosphate synthesis are affected by addn. of Cd compds., which increase the crystallization rate of the apatite lattice as a function of the Mn content and the stoichiometric compn., eliminating side reactions. Acceleration by addn. of CdO is greater the closer the additives are to the stoichiometric compn. and the higher the Mn content.

RN 1309-64-4 HCAPLUS
CN Antimony oxide (Sb₂O₃) (8CI, 9CI) (CA INDEX NAME)

IT 12394-20-6P
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(synthesis of, promoter effects on kinetics of)

RN 12394-20-6 HCAPLUS
CN Calcium chloride fluoride phosphate (Ca₁₀ClF(PO₄)₆)

Component	Ratio	Component Registry Number
Cl	1	22537-15-1
F	1	14762-94-8
O4P	6	14265-44-2
Ca	10	7440-70-2

HCAPLUS COPYRIGHT ACS on STN

AN 1974:470724 HCAPLUS
DN 81:70724
TI ESR of manganese(+2) in calcium fluorophosphate. II. Modified

calcium(II) sites
 AU Warren, R. W.; Mazelsky, R.
 CS Westinghouse Res. Lab., Pittsburgh, PA, USA
 SO **Physical Review B: Solid State** (1974), 10(1), 19-25
 CODEN: PLRBAQ; ISSN: 0556-2805
 AB Crystals of $\text{Ca}_{10}(\text{PO}_4)_6\text{F}_2$ contg. Mn were grown under a variety of conditions with large deviations from **stoichiometry**. ESR measurements show the presence of 2 new centers both of which involve Mn bound to intrinsic O-F vacancy defects. The dependence of their concns. upon **stoichiometry**, Mn concn., and thermal treatment is discussed. Models for these centers are proposed.
 IT 16397-91-4, properties
 RL: PRP (Properties)
 (ESR of calcium fluoride phosphate contg., new defect center formation in relation to)
 RN 16397-91-4 HCAPLUS
 CN Manganese, ion (Mn^{2+}) (8CI, 9CI) (CA INDEX NAME)

Mn²⁺

IT 12015-73-5
 RL: PRP (Properties)
 (ESR of **manganese**-contg., new center formation in relation to)
 RN 12015-73-5 HCAPLUS
 CN Calcium fluoride phosphate ($\text{Ca}_5\text{F}(\text{PO}_4)_3$) (6CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
F	1	14762-94-8
O4P	3	14265-44-2
Ca	5	7440-70-2

 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1970:514923 HCAPLUS

DN 73:114923

TI Low-pressure mercury vapor **discharge** lamps

PA Philips Electronic and Associated Industries Ltd.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 1119220		19680710		
PRAI NL		19641210		

PI GB 1119220 19680710

PRAI NL 19641210

AB Describes a low-pressure Hg vapor **discharge** lamp which consists of a glass envelope with an inner surface coating composed of 2 superimposed luminescent layers; the layer remote from the envelope consists of a mixt. of a **blue** luminescent substance and a red luminescent substance. The layer next to the envelope, which consists of Mn-activated Mg germanate or Mn-activated Mg arsenate converts part of the uv radiation not converted in the luminescent layer, which is remote from the envelope, into deep red radiation and absorbs given lines from the spectrum emitted by the Hg **discharge**, particularly the line at wavelength 4358 .ANG.. For example, a glass tube 112 mm long and with an inside diam. of 36 mm, was coated by a conventional suspension method with a layer consisting of a mixt. of 9 parts Mn-activated Mg arsenate and 1 part TiO_2 . Approx. 1.2 mg/cm² of the mixt. was applied to the glass surface. This layer was then coated with a luminescent layer consisting of a mixt. of 3 parts Sn-activated Sr Mg orthophosphate and 2 parts **blue** luminescent Sb-activated Ca halophosphate. Approx. 3.4 mg/cm² of this mixt. was applied. The color point of the light emitted from the low-pressure Hg vapor **discharge** lamp produced with the aid of this tube had the color coordinates $x = 0.372$ and $y = 0.374$. The permeability to the light emitted with a wavelength of 4,358 .ANG. was

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59.2%. The quotient of the quantity of energy emitted with wavelengths between 3,000 and 4,000 .ANG. divided by the quantity of energy emitted with wavelengths >3,000 .ANG. by this lamp was .apprx.1 .times. 10-2.

IT Calcium halide phosphates

RL: PRP (Properties)

(phosphors, contg. antimony for inner surface coating of mercury-vapor discharge lamp)

IT Coating materials

(phosphors, for inner surface of mercury-vapor discharge lamp)

IT 7439-96-5, uses and miscellaneous

RL: USES (Uses)

(phosphors, as inner surface coating of mercury-vapor discharge lamp)

RN 7439-96-5 HCAPLUS

CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mn

IT 7440-36-0, uses and miscellaneous

RL: USES (Uses)

(phosphors, in calcium halide phosphate for inner surface coating of mercury-vapor discharge lamp)

RN 7440-36-0 HCAPLUS

CN Antimony (8CI, 9CI) (CA INDEX NAME)

Sb

L48 ANSWER 51 OF 52 HCAPLUS COPYRIGHT ACS on STN

AN 1968:463343 HCAPLUS

DN 69:63343

TI Luminescence of phosphates

AU Wanmaker, Willem L.; Radielovic, D.

CS Light Div., N. V. Philips' Gloeilampenfabrieken, Eindhoven, Neth.

SO Bulletin de la Societe Chimique de France (1968), (Spec. No.), 1785-91

CODEN: BSCFAS; ISSN: 0037-8968

DT Journal

LA English

AB The prepn., properties, and applications of luminescent phosphates, mainly Ca fluorochlorapatite activated by Sb³⁺ and Mn²⁺, are studied. The variation of relative brightness, absorption of uv radiation, and quantum efficiency is presented graphically. The excitation and emission spectra of Ca₁₀(PO₄)₆(F, Cl)₂-Sb are given and demonstrate that 254-m.mu. radiation can be transformed into blue light. Energy transfer mechanisms are briefly discussed. The variation of the emission spectrum of .beta.-Ca₃(PO₄)₂ with the activators Ce, Tl, and Sn is given. Luminescent phosphates are prepd. by heating the reactants at 1100-1200.degree. in a slightly reducing atm. Purity and particle size of starting materials must be carefully controlled. Prolonged heating partially decomp. the phosphor and affects its uv absorbing properties. The application of phosphors to a study of solid state or solid-gas reactions and in Hg vapor lamps is discussed. 29 references.

RN 12015-73-5 HCAPLUS

CN Calcium fluoride phosphate (Ca₅F(PO₄)₃) (6CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
F	1	14762-94-8
O4P	3	14265-44-2

Ca | 5 | 7440-70-2

IT 7439-96-5, properties 7440-36-0, properties
 RL: PRP (Properties)
 (luminescence, of calcium chloride phosphate (Ca10Cl2(PO4)6) and
 calcium fluoride phosphate (Ca10F2(PO4)6) contg.)
 RN 7439-96-5 HCAPLUS
 CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mn

RN 7440-36-0 HCAPLUS
 CN Antimony (8CI, 9CI) (CA INDEX NAME)

Sb

 HCAPLUS COPYRIGHT ACS on STN

AN 1966:56473 HCAPLUS

DN 64:56473

OREF 64:10559f-h,10560a

TI Halophosphate luminescent materials with improved brightness

IN King, William G.; McKeag, Alfred H.

PA General Electric Co. Ltd.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 1018892		19660202	GB	19620518

PI GB 1018892

19660202

GB

19620518

AB The luminescence brightness and lumen output of halophosphate luminescent
 powd. materials for use in low-pressure Hg vapor fluorescent
 elec. discharge lamps are increased by a heat treatment in an
 inert atm. (N or Ar) at 900.degree. for 1/2-1 hr. to yield a loosely
 aggregated powder. The materials are substances of general formula
 3M3(PO4)2M.X2 and apatite crystal structure, in which M and M' are
 identical or different alk. earth metals, partly replaced by Zn, Cd or Mg,
 and X is one or more halogens; some Sb2O3 or Mn phosphate is added as
 activator. Such materials are made by heating at 1100-1250.degree. in one
 or more stages a mixt. of alk. earth phosphate(s), carbonates (or other
 compds. pyrolyzing to oxides) and halide(s), together with other halides
 which react with alk. earth oxides to yield their halides, and a compd. of
 Sb and (or) Mn. Thus, a mixt. of CaHPO4 1632, CaCO3 540, CaF2 133, NH4Cl
 50, Sb2O3 50, and Mn phosphate (36% Mn by wt.) 50 g. is fired in a covered
 silica tray at 1180.degree. for 1.5 hrs. and the product is crushed to
 pass through a 150-mesh silk screen. The powder is then reheated 1 hr. in
 a silica tube in a stream of pure N (O <10 ppm., CO2 <5 ppm.) at 500
 cc./min. and cooled in the N stream. The N heat treatment causes improved
 whiteness, 5% increase in luminescence brightness, and increase of lumen
 output from 64 to 68 lumens/w. when the product is coated on the internal
 surface of the envelope of a 5-ft., 80-w., low-pressure Hg vapor
 fluorescent elec. discharge lamp after 100 hrs. operation.

IT 7439-96-5, Manganese

(phosphors contg., for Hg vapor fluorescent lamps)

IT 12015-72-4, Calcium chloride phosphate, Ca5Cl(PO4)3

(phosphors, for Hg vapor discharge lamps)

IT 7440-36-0, Antimony

(detection or detn. of, phosphors contg., for Hg vapor
 fluorescent lamps)

RN 7440-36-0 HCAPLUS

CN Antimony (8CI, 9CI) (CA INDEX NAME)

SL

IT 7439-96-5, Manganese
 (phosphors contg., for Hg vapor fluorescent lamps)
 RN 7439-96-5 HCAPLUS
 CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mn

IT 12015-72-4, Calcium chloride phosphate, $\text{Ca}_5\text{Cl}(\text{PO}_4)_3$
 (phosphors, for Hg vapor discharge lamps)
 RN 12015-72-4 HCAPLUS
 CN Calcium chloride phosphate ($\text{Ca}_5\text{Cl}(\text{PO}_4)_3$) (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Cl	1	22537-15-1
O4P	3	14265-44-2
Ca	5	7440-70-2

 L48 ANSWER 52 OF 52 HCAPLUS COPYRIGHT ACS on STN

AN 1963:50112 HCAPLUS

DN 58:50112

OREF 58:8510f-g

TI Luminescent halophosphates

IN Gillooly, G. R.; Rabatin, J. G.; Vincent, T. C.

PA General Electric Co.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI BE 618793 19620928 BE

US 3109819 1963 US

PRAI US 19610620

AB Luminescent halophosphates for fluorescent light tubes are prepd. by mixing precisely defined quantities of the component parts, followed by an adjusted thermal treatment. Equil. phase studies show that an optimum compn. can so be obtained, resulting in a higher brightness. Thus, a cold white halophosphate is formed by heating a mixt., contg. CaHPO_4 6, CaCO_3 2.67, MnCO_3 0.17, CaF_2 0.88, CaCl_2 , 0.22, and Sb_2O_3 0.09 mole, to 1120-1180.degree. for 3 hrs., yielding $\text{Ca}_9.77\text{Mn}_0.17\text{P}_6\text{O}_{24}.06\text{Cl}_{10}.18\text{F}_{1.76}\text{Sb}_0.06$. Similarly prepd. are a blue calcium fluorophosphate $\text{Ca}_9.92\text{P}_6\text{O}_{24}.08\text{F}_{1.92}\text{Sb}_0.08$, and a white calcium halophosphate $\text{Ca}_9.60\text{Mn}_0.34\text{P}_6\text{O}_{24}.06\text{Cl}_{10}.48\text{F}_{1.76}\text{Sb}_0.06$.

IT Lamps, electric

(electroluminescent or fluorescent, halide phosphate luminescent substances for)

IT Calcium manganese chloride fluoride phosphate

Manganese calcium chloride fluoride phosphate

(luminescent substances)

IT 7440-36-0, Antimony

(detection or detn. of, phosphors contg.)

IT 11125-98-7, Calcium fluoride phosphate

(luminescent substances)

IT 7440-36-0, Antimony

(detection or detn. of, phosphors contg.)

RN 7440-36-0 HCAPLUS

CN Antimony (8CI, 9CI) (CA INDEX NAME)

Sb

IT 11125-98-7, Calcium fluoride phosphate
(luminescent substances)
RN 11125-98-7 HCAPLUS
CN Calcium fluoride phosphate (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
F	x	14762-94-8
O4P	x	14265-44-2
Ca	x	7440-70-2

HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1961:139838 HCAPLUS

DN 55:139838

OREF 55:26397c-d

TI Electric gas-discharge lamp coated with a luminescent layer
IN Wanmaker, Willem Lambertus; Bakker, Cornelis; Arents, Johannes W. M.
PA N. V. Philips' Gloeilampenfabrieken
PATENT NO. KIND DATE APPLICATION NO. DATE

PI DE 1085966 19600728 DE

AB The glass tube of a Hg-vapor lamp is preferably coated with a luminescent suspension on the inner side, e.g. with a halophosphate in an org. liquid, by addn. of nitrocellulose (I) as stabilizer and Ba tetraphosphate as adhesive. Thus, 7.5 g. I was dissolved in 1 kg. BuOAc, and 1000 g. Mn- and Sbactivated Ca fluorochlorophosphate [Ca10P5O24(F0.8 + Cl0.2): Sb, Mn] and 50 g. Ba tetraphosphate were suspended in this soln. Then the suspension was crushed in a ball mill for 4-6 hrs. and dild. with 0.6 l. BuOAc comprising 0.4% by wt. I. The glass wall was coated with this emulsion, and then the layer was heated to 500-700.degree. for 1-4 min., by blowing in air, for the complete removal of the I.

IT Lamps, electric
(lining of, with luminescent substances)

IT Luminescent substances
(lining with, in elec. gas-discharge lamps)

IT Lining
(of elec. lamps (gas-discharge) with luminescent substances)

IT 7439-96-5, Manganese 7440-36-0, Antimony
(calcium fluorochlorophosphate activated by, lining with, in Hg-vapor lamps)

IT 42615-56-5, Calcium chloride fluoride phosphate
(lining with Sb- and Mn-activated, in Hg-vapor lamps
)

RN 42615-56-5 HCAPLUS

CN Calcium chloride fluoride phosphate (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Cl	x	22537-15-1
F	x	14762-94-8
O4P	x	14265-44-2
Ca	x	7440-70-2

IT 7439-96-5, Manganese 7440-36-0, Antimony
(calcium fluorochlorophosphate activated by, lining with, in Hg-vapor lamps)

RN 7439-96-5 HCAPLUS

CN Manganese (8CI, 9CI) (CA INDEX NAME)

10/080,226 10/7/2003

En

RN 7440-36-0 HCAPLUS
CN Antimony (8CI, 9CI) (CA INDEX NAME)

Sb

CAS/STN SEARCH HISTORY

FILE 'REGISTRY' ENTERED AT 08:33:33 ON 07 OCT 2003

L22 567 S CA/ELS,MAC AND P/ELS,MAC AND O/ELS,MAC AND F/ELS,MAC
L23 55 S L22 AND CL/ELS,MAC
L24 18 S L22 AND SB/ELS,MAC
L25 42 S L22 AND MN/ELS,MAC
L26 1 S ANTIMONY/CN
L27 1 S MANGANESE/CN

FILE 'HCAPLUS' ENTERED AT 08:37:18 ON 07 OCT 2003

L28 576 S L22 AND ((L26 OR L27) OR SB OR MN OR MANGANESE OR ANTIMONY)
L29 5156 S L22

FILE 'REGISTRY' ENTERED AT 08:39:02 ON 07 OCT 2003

L30 6 S L23 AND L24
L31 14 S L23 AND L25
L32 14 S L24 AND L25

FILE 'HCAPLUS' ENTERED AT 08:39:03 ON 07 OCT 2003

L33 219 S L23
L34 14 S L24
L35 152 S L25
L36 10 S L30
L37 11 S L31
L38 12 S L32
E ELECTRIC LAMP/CT
E E4+ALL/CT
L39 165075 S ("RADIATION SOURCES"/CT OR "LIGHT SOURCES"/CT OR "ELECTRIC LAMPS"/CT OR
"LAMPS, ELECTRIC"/CT) OR "ELECTRIC DISCHARGE LAMPS"/CT OR ("FLASH LAMPS"/CT
OR "ION SOURCES (L) PLASMATRONS"/CT OR PLASMATRONS/CT OR "ION SOURCES (L)
DUOPLASMA TRONS"/CT OR "FLUORESCENT LAMPS"/CT OR "ELECTRIC LAMPS (L)
FLUORESCENT, ENVELOPES"/CT OR "LAMPS (L) UV"/CT OR "UV LAMPS"/CT) OR
ILLUMINATION/CT OR LAMP#### OR LIGHTING OR LIGHTS OR ILLUMINAT#####
L40 83 S (LUMINAIRE/BI OR LUMINAIRES/BI OR LUMINAIRES/BI)
L41 165106 S (L39 OR L40)
L42 762 S L28 OR (L33 OR L34 OR L35 OR L36 OR L37 OR L38)
L43 44 S L29(L) (BLUE OR GREEN OR WHITE)
L44 89 S L42 AND (BLUEGREEN OR GREENBLUE OR BLUE OR GREEN OR WHITE)
L45 196 S L29 AND (BLUEGREEN OR GREENBLUE OR BLUE OR GREEN OR WHITE)
L46 196 S (L43 OR L44 OR L45)
L47 38 S L46 AND L41
L48 52 S L34 OR (L36 OR L37 OR L38) OR L47
L49 44 S L46 AND (FLUORESC##### OR PHOSPHORESC#####)

FILE 'REGISTRY' ENTERED AT 08:48:09 ON 07 OCT 2003

L50 1 S MERCURY/CN

FILE 'HCAPLUS' ENTERED AT 08:48:09 ON 07 OCT 2003

L51 89975 S L50
L52 10 S L46 AND (MERCURY OR L51 OR HG)

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L53 12 S L49 NOT L48
L54 0 S L52 NOT L48

FILE 'REGISTRY' ENTERED AT 08:49:50 ON 07 OCT 2003
L55 49466 S MERCURY OR HG/MAC,ELS

FILE 'HCAPLUS' ENTERED AT 08:50:05 ON 07 OCT 2003
L56 3 S L55 AND L46
L57 7 S L52 NOT L56
L58 11 S L46 AND BLUE GREEN
L59 52 S L48 OR L56 OR L57
L60 4 S L58 NOT L59

=> log h

STN INTERNATIONAL SESSION SUSPENDED AT 08:53:24 ON 07 OCT 2003

END OF CAS/STN PART OF SEARCH

PART 2 -- DIALOG SEARCH HISTORY

07oct03 07:54:50 User259284 Session D2421.2

File 2:INSPEC 1969-2003/Sep W4
(c)Institution of Electrical Engineers

Set	Items	Description
S1	306	CI=(CA SS(S)P SS(S)O SS(S)F SS)
S2	48	S1 AND (CI=CL OR CI=MN OR CI=SB)
S3	31	S1 AND (HALOPHOSPHAT? OR MN OR SB OR ANTIMONY OR MANGANESE)
S4	50	S2:S3
S5	8	S1 AND (HG OR MERCURY OR CI=HG)
S6	48	S4 NOT S5
S7	4	S6 AND (LIGHTING OR ILLUMINAT???? OR LAMP??????)
S8	6618	LIGHT SOURCES (January 1969)
S9	1	6AND8
S10	10	R1:R16 AND S6
S11	6	S10 NOT (S7 OR S5)
S12	0	S6 AND DISCHARG?
S13	1	S6 AND (GAS OR GASES OR GASSES OR GASEOUS OR VAPOR? OR VAPOUR?)
S14	5	S6 AND FLUORESC?????????

5/9/8

DIALOG(R)File 2:INSPEC

(c)Institution of Electrical Engineers. All rts. reserv.

4728377 INSPEC Abstract Number: A9418-7855-031

Title: Luminescence of calcium halophosphate during excitation in the range of 4-11 eV

Author(s): Benderskaya, L.P.; Voloshinovskii, A.S.; Pashuk, I.P.;

Pidzyrailo, N.S.

Author Affiliation: I. Franko Lvov State Univ., Ukraine

Journal: Zhurnal Prikladnoi Spektroskopii vol.58, no.3-4 p.379-81

Publication Date: March-April 1993 Country of Publication: Byelorussia

10/080,226 10/7/2003

CODEN: ZPSBAX ISSN: 0514-7506

Translated in: Journal of Applied Spectroscopy vol.58, no.3-4 p.293-5

Publication Date: March-April 1993 Country of Publication: USA

CODEN: JASYAP ISSN: 0021-9037

U.S. Copyright Clearance Center Code: 0021-9037/93/0304-0293\$12.50

Language: English Document Type: Journal Paper (JP)

Treatment: Experimental (X)

Abstract: The quality of halophosphate luminophors (HPhL) is determined in many respects by their stability to the action of mercury discharge radiation in the region of 147, 185, and 254 nm. Therefore, knowledge of photoluminescence excitation spectra, overlapping this region, is of interest. As objects of investigations we took samples of calcium halophosphate doped with antimony and manganese: $\text{Ca}_{5/(\text{PO}_{4/3}(\text{F,Cl})\text{Sb,Mn})}$, synthesized in air, in a nitrogen current, and in a slightly reducing medium (CO) using ordinary and modified raw material (dicalcium phosphate, calcium carbonate) and additional surface treatment by aluminium salts. Photoluminescence excitation spectra were recorded separately for emission bands of Sb^{3+} (480 nm) and Mn^{2+} (580 nm) ions at room and low (down to 4.2 K) temperatures. (8 Refs)

Chemical Indexing:

Ca₅PO₄FCl:Sb,Mn ss - Ca₅PO₄FCl ss - Ca₅ ss - PO₄ ss - Ca ss - Cl ss - Mn ss - O₄ ss - Sb ss - F ss - O ss - P ss - Mn el - Sb el - Mn dop - Sb dop (Elements - 5,1,1,7)

7/9/1

DIALOG(R)File 2:INSPEC

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6169742 INSPEC Abstract Number: A1999-07-7860K-001, B1999-04-4220M-001

Title: Luminescence studies on lamp phosphors

Author(s): Nagpal, J.S.; Godbole, S.V.; Varadharajan, G.; Page, A.G.

Author Affiliation: Bhabha Atomic Res. Centre, Mumbai, India

Journal: Radiation Protection Dosimetry vol.80, no.4 p.417-22

Publisher: Nuclear Technology Publishing,

Publication Date: 1998 Country of Publication: UK

CODEN: RPDODE ISSN: 0144-8420

SICI: 0144-8420(1998)80:4L:417:LSP;1-4

Material Identity Number: B978-1998-017

Language: English Document Type: Journal Paper (JP)

Treatment: Experimental (X)

Abstract: Photoluminescence and thermoluminescence of cerium magnesium aluminate $\text{CeMgAl}_{11/(\text{O})_{17}(\text{Eu,Tb})}$ and calcium halophosphates $\text{Ca}_{5/(\text{PO}_{4/3}(\text{F,Cl})\text{Mn,Sb})}$, two fluorescent materials currently in use for the commercial production of lamps in India, have been studied for possible applications in radiation and ultraviolet dosimetry. Cerium magnesium aluminate is highly sensitive to the visible spectral region. It has a linear response to 254 nm UV radiation over a wide range. Its UV sensitivity is significantly higher as compared to that of other known phosphors; however, its UV response is rate-dependent and may not play a significant role in UV dosimetry. Photoluminescence of CeMg aluminate is characteristic of Eu^{2+} and Tb^{3+} dopants, whereas the thermoluminescence emission of the UV irradiated powder at room temperature is dominated by Eu^{2+} dopant. Calcium halophosphate is insensitive to room lights, has a linear gamma response over 0.2-10/sup 2/ Gy and may be useful in the case of radiation accidents. (10 Refs)

Chemical Indexing:

Ca₅PO₄FCl:Mn,Sb ss - Ca₅PO₄FCl ss - Ca₅ ss - PO₄ ss - Ca ss - Cl ss - Mn ss - O₄ ss - Sb ss - F ss - O ss - P ss - Mn el - Sb el - Mn dop - Sb dop (Elements - 5,1,1,7)

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7/9/3

DIALOG(R)File 2:INSPEC (c) Institution of Electrical Engineers. All rts. reserv.

5313464 INSPEC Abstract Number: A9616-4272-003, B9608-4220M-006

Title: Broad- and narrow-band lamp luminophors

Author(s): Benderskaya, L.P.; Morozov, E.G.; Borisov, S.A.; Novikov, A.I.

Author Affiliation: Public Corp. Luminophor, Stavropol, Russia

Journal: Zhurnal Prikladnoi Spektroskopii vol.62, no.3 p.197-203

Publisher: Plenum,

Publication Date: May-June 1995 Country of Publication: Byelorussia

CODEN: ZPSBAX ISSN: 0514-7506

SICI: 0514-7506(199505/06)62:3L:197;1-T

Material Identity Number: J243-96003

Translated in: Journal of Applied Spectroscopy vol.62, no.3 p.568-72

Publication Date: May-June 1995 Country of Publication: USA

CODEN: JASYAP ISSN: 0021-9037

SICI of Translation: 0021-9037(199505/06)62:3L:568:BNBL;1-3

U.S. Copyright Clearance Center Code: 0021-9037/95/6203-0568\$12.50

Language: English Document Type: Journal Paper (JP)

Treatment: Practical (P); Experimental (X)

Abstract: In the mid-1980s the nomenclature of the lamp luminophors of domestic manufacture comprised 24 names; at the present time it has been enlarged to 40. This ensures the manufacture of luminescent lamps with color temperatures from 2750 to 6500 K using broad-band and narrow-band luminophors as well as compositions based on them. At the present time the attention of research workers is focused on the solution of two problems: the production of cadmium-free halophosphate luminophors (HPL) for standard and energy-saving lamps and increasing the illumination characteristics of luminophors with rare-earth metals (REM) for compact lamps and directly heated tubes with a high light efficiency (>80 Lm/W) at a high total color rendering index ($R_{\text{sub } \alpha} / >85$). The replacement of cadmium-containing by cadmium-free HPLs has been necessary for the purpose of improving the ecology of the production of luminophors and providing safe treatment and utilization of used luminescent lamps. When developing the technology of cadmium-free halophosphate luminophors we carried out a number of studies: optimization of the technology of production of a binary salt (calcium-manganese carbonate-fluoride) to improve the homogenization of the charge and distribution of the activator throughout the volume; optimization of the ratio of halogens in the charge and the conditions of thermal treatment to improve the spectral characteristics and decrease the defectiveness of luminophors. (8 Refs)

Chemical Indexing:

CaMnP04F ss - P04 ss - Ca ss - Mn ss - O4 ss - F ss - O ss - P ss
(Elements - 5)

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DIALOG SEARCH HISTORY

File 2:INSPEC 1969-2003/Sep W4

Set	Items	Description
S1	306	CI=(CA SS(S)P SS(S)O SS(S)F SS)
S2	48	S1 AND (CI=CL OR CI=MN OR CI=SB)
S3	31	S1 AND (HALOPHOSPHAT? OR MN OR SB OR ANTIMONY OR MANGANESE)
S4	50	S2:S3
S5	8	S1 AND (HG OR MERCURY OR CI=HG)
S6	48	S4 NOT S5
S7	4	S6 AND (LIGHTING OR ILLUMINAT???? OR LAMP?????)
S8	6618	LIGHT SOURCES (January 1969)
S9	1	6AND8
S10	10	R1:R16 AND S6
S11	6	S10 NOT (S7 OR S5)
S12	0	S6 AND DISCHARG?

10/080,226 10/7/2003

S13 1 S6 AND (GAS OR GASES OR GASSES OR GASEOUS OR VAPOR? OR VAPOUR?)
S14 5 S6 AND FLUORESC??????????

? logoff

07oct03 08:03:22 User259284 Session D2421.3

Logoff: level 03.03.02 D 08:03:22

